THE RAILWAY GAZETTE

A Journal of Management, Engineering and Operation

INCORPORATING

The Railway Engineer · TRANSPORT · The Railway News

The Railway Times · Herapath's Railway Journal · RAILWAY RECORD.

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DIESEL RAILWAY TRACTION SUPPLEMENT

The January issue of THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction, will be ready on January 1, price 1s.*

NOTICE TO SUBSCRIBERS

Consequent on paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list which will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and facilities for such dispatch.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

REDUCTION IN SIZE OF PAGE

To economise in paper our readers will observe a slight reduction in the size of THE RAILWAY GAZETTE *in that the size of the page has been reduced from 9 in. × 12 in. to 8½ in. × 11½ in. The type area of the page remains the same, namely, 7 in. × 10 in., but the surrounding margins have been reduced. This of course detracts from the appearance of the paper, but is one of the exigencies of the war*

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:
Mondays to Fridays 9.30 a.m. till 4 p.m.
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

The Fourth Christmas of War

THE fourth wartime Christmas finds the people of this country with a greater assurance of victory within measurable time than has been possible in preceding years. In the past twelve months great changes have been wrought in the dispositions of our Forces, and there has been a vast increase in the weight and efficiency of our arms. In making possible the much augmented output of munitions, and their movement to the theatres of war in which they may be used with the most telling effect on the enemy, a burden has been placed on all forms of transport and the ancillary industries which has surpassed anything previously experienced. How well the strain has been taken will not be known in full until after the end of the war. It is apparent already that prodigious efforts have been made and that the achievements have been very great. Equally, of course, the movement of the Armed Forces and, indeed, of the majority of members of a nation which is now fast becoming fully mobilised, has had to be dealt with to a very large extent, increasing in recent months by reason of inevitable curtailments of road transport, by the railways of this country. Lately, transport of all kinds has had to adjust itself once more to changes in the flow of certain traffics. Coupled with the continuing influx of allies into this country, there is now a considerable efflux of men and munitions to the fronts. The tasks which remain make it essential that there should be no relaxation of effort but, indeed, that the achievements already attained should be exceeded in the year which will shortly open. In the meantime, Christmas this year may be celebrated with a sober confidence which will be all the greater if it is accompanied by abstention from festive and other non-essential travel, so that the rails may be clear for traffics which will help in the more speedy restoration of goodwill.

Lighting on Trains

A sense of proportion seems to be lacking by the daily press regarding railway operation, and an example is provided by a gruesome angle on the necessity for the blackout regulations in trains which was given by *The Daily Mail* on December 9, when it declared that persons were being killed or maimed by falling out of trains because in the darkness they do not know whether or not they are at a platform, and went on to ask whether in the fourth year of the war the continuation of discomfort arising from darkened trains and stations was really necessary. In fact, very few persons have been killed or maimed from this cause, whereas some 46,000 have been killed in air raids. The newspaper called for "more light please, in our trains," and seemed to think that the railways could do a good deal to alleviate the rigours of blackout travelling. In fact, of course, the railways in this matter have no option but to put into effect regulations imposed on them from above. It is quite possible that some mitigation of hardship could be achieved if permission, manpower, materials, and ingenuity were all available. The present time, however, seems hardly opportune to call for measures, to implement which would involve a further draft on the already severely pruned manpower of the companies and of the nation, and which would necessitate provision of materials which are more urgently required for other purposes. Moreover, there would be no guarantee that it would prove possible to maintain, for any length of time, a relaxation of existing blackout restrictions. Those who now clamour for more light might be the first to demand less if there should be a resumption of air raids on this country.

Ministry of Production's Powers of Inspection

The Ministry of Production has issued an important new Order which provides powers of entry and inspection of industrial records and premises. In effect the Order renders every kind of undertaking liable to inspection of its books and general organisation, but it is intended primarily to apply to engineering and allied units engaged in direct war production. The full title of the measure is the Industry (Records & Information) and Inspection of Premises (No. 1) Order, 1942. It empowers the Minister to issue special or general directions to every person carrying on any undertaking to keep such books, accounts, and records relating to that undertaking as may be prescribed. It also gives powers to secure the production of books, accounts, and other documents, and the furnishing of estimates, returns,

CHRISTMAS PUBLISHING ARRANGEMENTS

To conserve paper and reduce postage of copies in Christmas week, this and next week's issues of THE RAILWAY GAZETTE *have been combined. There will thus be a fortnight's interval until the next regular weekly issue, due to be published on Friday, January 1*

or information. Premises may be inspected, tests carried out, samples taken, or any investigation made. The Order applies to a number of principal authorities in addition to the Ministry of Production; these include the Admiralty, the War Office, the Air Ministry, the Ministry of Labour & National Service, the Ministry of Supply, the Ministry of Aircraft Production, and the Ministry of Works & Planning. The powers which have been taken are undoubtedly both comprehensive and drastic, and although it may be claimed that they are justified by the exigencies of the war, there can be no doubt that they add still further to the already very great power which is wielded by modern bureaucracy, and fall within the category of the many wartime emergency measures which must be repealed as soon as possible after the cessation of the present conflict. Last week on the Second Reading of the National Service Bill, the Minister of Labour said: "I ought to make it clear that the situation is such that we have to use every possible source at our disposal if we are to have the men we need for munition factories, the services, and to maintain the civil life of the community on a balanced requirement." Yet in contradistinction to this, the Minister of Production's new Order will presumably create new hordes of inspectors and throw more work on the already depleted staffs of commercial firms.

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Overseas Railway Traffics

Because of the near approach of the Christmas holidays we are unable to give the usual fortnightly results of overseas railways. It will be seen from the accompanying table that the four principal British-owned railway companies in Argentina showed appreciable increases in their receipts for the 23rd week of the financial year and that to date their position is satisfactory so far as the aggregate gross earnings are concerned. The Argentina North Eastern for the first 23 weeks of the year records a gain of £41,718 in gross receipts, and the Entre Rios one of £36,366. Among Brazilian railways the Great Western is £72,300 up in gross earnings for the first 49 weeks of 1942, and the corresponding increase on the Leopoldina is £193,623. San Paulo traffics continue their gradual rise, and the advance for the 48 weeks to November 29 has reached £16,149.

	No. of week	Weekly traffics £	Inc. or decrease £	Aggregate traffic £	Inc. or decrease £
Buenos Ayres & Pacific* ...	23rd	103,080	+ 20,280	2,018,700	+ 231,000
Buenos Ayres Great Southern*	23rd	185,340	+ 19,560	3,215,760	+ 220,740
Buenos Ayres Western* ...	23rd	58,440	+ 7,140	1,183,020	+ 37,440
Central Argentine*	23rd	147,705	+ 55,647	2,854,485	+ 387,468
Canadian Pacific	48th	1,437,600	+ 268,000	46,468,200	+ 6,419,800

* Pesos converted at 16⅔ to £

For the United of Havana the traffic increase in the 23rd week was £29,548, and the gross earnings to date amount to £952,182, an improvement of £515,491.

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Remarkable Bus Position in Eire

Road transport in Eire has been reduced to one quarter of its pre-war volume, but goods haulage seems to have taken the greater part of the impact. Railway-owned provincial bus services, operated entirely by single-deck vehicles (excepting for the Cork town routes), now show receipts of 2s. 9d. a mile, compared with 1s. 3d. in the month before the war. Official figures are as follow :—

August	Miles	Receipts £	Per mile s. d.
1939	1,210,000	72,264	1 3
1940	1,150,000	67,284	1 2
1941	738,000	69,381	1 10½
1942	512,000	69,971	2 9

These railway-owned buses derive substantial revenues, estimated at about 3d. a vehicle mile, from parcels and light goods traffic. It is noteworthy that less satisfactory receipts, in relation to mileage worked, are obtained from the Dublin city and suburban services, the figures for which are as follow :—

August	Miles	Receipts £	Per mile s. d.
1940	1,667,000	91,921	1 0
1941	1,465,000	99,979	1 5
1942	955,000	86,427	1 10

A high-proportion of the Dublin services is maintained with double-deck vehicles, but Dublin suburban trains are still running fairly normally, whereas in the provinces rail and road overlapping has been virtually eliminated, and on most railway lines there is but one passenger train a day.

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Preparing for Peace

It may perhaps be considered as a sign of growing optimism that people are talking of war aims and coming forward with plans for post-war reconstruction and social reorganisation. Within a week Sir William Beveridge presented the nation with his plan for a more comprehensive scheme of State insurance, and Lord Sempill delivered before a meeting at the Institution of Civil Engineers an address on the subject of post-war economics. That conditions should now permit the devotion of some time and energy to the problem of peace is distinctly encouraging, and we can be glad that an effort is being made to anticipate new conditions and to avert a return to that state of chaos out of which evils making for war are seen to arise. Lord Sempill's address was highly controversial and no doubt it will be fully discussed in engineering circles. Here it is only possible to say that he deplored the limit set on peacetime consumption and hence on peacetime production by bottlenecks of a financial kind, and he outlined a new way of financing capital works, choosing for his illustration the building of a bridge. He pointed out that the power of man was greatly multiplied by machinery and suggested that his command over material wealth should be correspondingly increased. He said that a 1,250 h.p. locomotive with a three-man crew represented a 5,000-fold magnification of human power.

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New York Central Railroad

The business of this company during 1941 continued to be influenced largely by the expanding programme of national defence. Additional and improved facilities and equipment made it possible for the company to handle efficiently the largely increased traffic occasioned by the war economy. Freight revenue, amounting to $336,878,403, was $66,604,375, or 24·64 per cent., in excess of that obtained in 1940, and the advance of 23·97 per cent. in the volume of freight transported was secured with an increase of only 15·43 per cent. in freight train-miles. The operating ratio was 74·02 per cent., against 75·21 per cent. in 1940. Some results follow :—

	1940 $	1941 $
Railway operating revenues	370,545,875	447,789,655
Railway operating expenses	278,674,980	331,438,111
Net railway operating income	44,052,437	57,418,760
Income available for fixed charges	60,247,938	75,051,334
Fixed charges	48,982,854	48,805,772
Net income	11,265,084	26,245,562

Balance to credit of profit and loss at the end of 1941 amounted to $174,468,421. Assets of the Securities Corporation of the New York Central Railroad, a wholly owned subsidiary, were in November, 1941, transferred to the company, and following such transfers, the Securities Corporation was dissolved. These assets consisted principally of stock of the Delaware, Lackawanna & Western Railroad, which had been acquired in 1929–31 in connection with a consolidation plan of Eastern railroads.

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Open Vestibule Cars

In the years immediately preceding the outbreak of war, the four main-line railways, and in particular the L.M.S.R. and L.N.E.R., built very large numbers of open third class vestibule cars to handle the great increase in pre-war excursion traffic. It was at summer week-ends that this excursion stock found its maximum use; over large parts of the year, especially in winter, it spent most of its time in storage. In war conditions, however, the railway companies have found this considerable reserve of coaches of the utmost value; of the express trains leaving Euston, Kings Cross, and St. Pancras the major proportion of the vehicles is often open vestibule stock of this description. The open car has proved popular in wartime conditions; there is not the same crowding discomfort, especially with the L.N.E.R. bucket-seat cars, that there is in a compartment coach with four passengers on each side; the tables prove handy in many ways; and in the blackout, with suitable blinds, better lighting is usually permitted than in the compartments. More important, the sense of good fellowship that comes from travelling, party fashion, in these large open vehicles, may have a profound influence on the development of long-distance passenger rolling stock after the war. Hitherto, with traditional British insularity, we have preferred compartment accommodation, and, above all, compartments to ourselves when obtainable, but the effect of communal war travel may lead to a considerable extension of open-car construction, like that of the United States, after the war.

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Reduced Fares for the Services

From time to time we come across cases of officers in the Services being refused reduced-rate tickets for journeys under 50 miles because they are not in possession of a pass. In at least one Service, officers are issued with a pass only when on seven days' leave, and as they are then given a free rail warrant as well, the question of cheap tickets does not arise. Usually an explanation at the booking office window will suffice to overcome the scruples of the clerk, but since the withdrawal of

cheap Service rates for longer journeys booking clerks are rightly exercising greater caution in the granting of cheap fares. At one time production of an identity card by officers was accepted in lieu of a pass and no doubt this instruction still holds good although not all ticket office employees seem to be aware of it. It is a situation we should like to see made clear, as the various restrictions on Service travel—necessary as they may be—are the cause of some disappointment to put it mildly, and avoidance of further aggravations is necessary to the maintenance of good feeling between the railways and an ever-growing number of the population.

Waterproofing the Formation

During the past 20 years or so, the Swiss Federal Railways have been systematically replacing shingle and sandy ballast by broken stone, and have, at the same time, devoted much attention to improving the formation. Considerable trouble has been experienced in certain cuttings, and, although layers of sand or slag have been laid between the marl and ballast, and various drainage schemes have been devised, the problem was not finally solved in all cases until a layer of asphalte had been spread over the formation. The method of procedure is for the marly formation to be cut away for 3-4 in., and for a cambered layer of sifted ballast to be spread over it and rolled with a 3-ton roller. This is then covered with Spramex spread hot and again rolled. A couple of inches of washed sand separates this asphalte from the stone ballast. The asphalte is mixed in a covered wagon at a temperature of 140° C., and in favourable circumstances 600 sq. m. can be spread in a day. Frequent inspection has shown that this mattress of Spramex asphalte retains both its imperviousness to moisture and plastlcity. A cutting so treated early in 1936 has proved entirely satisfactory, one of the chief advantages of this method being that the formation soil is completely protected from frost, which causes it to expand ; cost of track maintenance has also been greatly reduced. The method has been frequently applied since then with success.

Locomotive Testing

Locomotive testing presents so many difficulties that, relatively to the number of locomotives in use, and to the number of years railways have been in existence, trial figures enabling locomotive performance to be scientifically analysed are still somewhat scanty. It was rather to be hoped that fresh data might be forthcoming in the new book entitled " The Steam Locomotive," which we review elsewhere in this issue. The author, Mr. R. P. Johnson, M.E., is Chief Engineer of the Baldwin Locomotive Works. However, this book deals mainly with information that has already been accessible for some time to students of the locomotive. For instance, reference is several times made to the admirable locomotive test plant reports of the Pennsylvania Railroad. These have been drawn on by many authors and as long ago as 1931-32 there appeared in one of our constituents, *The Railway Engineer*, a series of articles on the factors affecting locomotive efficiency in which information was taken from these same reports. Mr. Johnson has been rather "isolationist" in his selection of the material on which he has based his book and, insofar as practice outside America has received only a bare mention here and there, the treatment of the subject must be regarded as limited. In the bibliographical list given at the end, the number of noteworthy works listed falls short of the number omitted, and we find it hard indeed to excuse the overlooking of Chapelon's painstaking classic " La Locomotive à Vapeur."

Railway Operators

At last the status of that sorely tried body of railway officials doomed to obscurity as traffic managers, superintendents, controllers and whatnot, has been raised, or at least recognised. No longer is the traffic pusher " born to blush unseen "—hiding his virtues timidly in the shadow of those of his colleagues who dwell in the loftier realm known as " technical "—for no less an authority than the Minister of Labour & National Service is advertising " FOR RAILWAY OPERATING ENGINEERS between 28 and 45, with actual outside experience of railway traffic department, block and emergency working, station depot yard working, signalling and traffic control, or practical experience of motion power department, locomotive practice, and rolling stock maintenance, diesel or steam," to take Army Commissions. It is unusual, at least in this country, for a railway traffic operating officer to be designated an " engineer." Dictionary definitions of the word " engineer " are not particularly enlightening. The only explanation apparent for debasing a word obviously intended to be associated with engines, prime movers, and expanded to apply to machines in general, seems to emanate from the verb " to engineer "—the colloquial definition of the noun of that ilk being " one who skilfully manages (engineers) an enterprise or undertaking."

British-owned Railways in Argentina

THE position of the British-owned railway companies in Argentina has been unsatisfactory for a good many years now, and the outlook for them must be viewed with disquiet. The matter was raised in the House of Commons on December 9 by Sir Robert Rankin, the Conservative Member for Kirkdale, who asked the Foreign Secretary whether he would instruct the consular service in the Argentine to furnish a report as to the financial position of the British-owned Argentine railways. Mr. Eden's reply was that the companies concerned were all registered in this country, and that as the material necessary for a full understanding of their financial position was already available in London, he did not see what useful purpose Sir Robert Rankin's suggestion would serve. It is only too true that there is no doubt as to the adverse financial position of the companies; the speeches of the chairmen at the annual general meetings recently held, together with the annual reports and accounts which have been issued, can leave no doubt as to the gravity both of their present state and of their immediate prospects.

The strain which is being imposed on the financial resources of the companies ultimately must react adversely on the operational efficiency of the lines and, it is pertinent to add, in that event the entire economy of the Argentine Republic would be unfavourably affected. The agricultural and industrial prosperity of Argentina has been directly promoted by the facilities which have been provided by the £250,000,000 of British capital which is invested in the companies, and which has made possible the working of some 15,000 miles of line. An indication of the straits to which the Argentine railways have been reduced may be gauged from the fact that at the end of last June the six principal undertakings were carrying forward an aggregate debit balance of some £13,410,000. At that time the railways had experienced twelve months of rising traffics, and the debit balance mentioned had arisen largely because of exchange losses and differences which in ten years have cost some £29,000,000. No ordinary dividends have been forthcoming since 1930, and since the next year payments on preference stock have been in arrears; debenture mortoria have become commonplace, and it has not been possible for the companies to make adequate provision for renewals.

It is symptomatic of the gravity of the position of the companies that the chairmen of the major railway undertakings have been moved to address an open letter to *The Financial News*. The signatories are Mr. J. M. Eddy, Chairman of the Buenos Ayres Great Southern Railway Co. Ltd. and the Buenos Ayres Western Railway Limited; Mr. W. Howard Williams, Chairman of the Central Argentine Railway Limited; Mr. J. A. Goudge, Chairman of the Buenos Ayres Pacific Railway Co. Ltd.; and Sir Follett Holt, Chairman of the Entre Rios Railway Co. Ltd. and of the Argentine North Eastern Railway Co. Ltd. The letter points out that the position of the capital invested in the railways has been made clear to the authorities in that country for some years. Apart from general conditions affecting railways all over the globe, before and since the war there have existed in Argentina special circumstances which have been brought forward repeatedly, but so far with negligible results. The chairmen go on to say that it is becoming evident that the foreign ownership of these lines has operated against any real remedial measures, and that if Argentine capital had been invested in these railways, governmental action would have been recognised as essential. In support of this, it is pointed out that during the whole period of decreased returns the State lines have been improved continuously at the public expense; equipment has been modernised; extensions have been built; and a proper policy of development and progress has been carried out. The main difficulty has arisen from the levy charged on the railway companies' remittances. The Exchange Control, established in 1931, required the railways to pay a profit rate on every pound remitted to Britain; the control acquired the peso at varying rates (lately at 13·50 pesos to the £) and sterling was permitted to be acquired only at a higher rate; at present it is 17 pesos to the £ for ordinary business; 16⅔ pesos for the railways financial service, and 15 pesos for payment of imported stores.

It is clear that these rates constitute a Government impost and the results have been serious. The amounts paid by the British-owned railways direct to the Argentine Government on account of the levy during the past three years has been £1,167,217 in 1939-40, £914,503 in 1940-41, and £1,048,731 in 1941-42. The chairmen point out that this charge is more inequitable because this profit made by the Government has been used mainly to subsidise cereal producers by guaranteed fixed prices for their produce. In 1935 it will be recalled that a special Government commission came to the conclusion that special consideration was

due to the railways because, although ordinary business was able to make good an exchange levy by increasing prices, the railways were debarred by Government restrictions on tariffs from similar action. Nevertheless, in spite of numerous and continued efforts, the only partial relief afforded to companies has been the fixing of the rate for remittances mentioned above. It should also be noted that the Mitre Law liberated the railways from all taxation in exchange for a single tax of 3 per cent. on profits, which has been regularly paid. The Argentine Government view is that the exchange levy is not a tax, but in effect at least, its operation is the same. The chairmen show that one clear result of the exchange levy has been to bring the majority of the railways into default on their debentures, and that as a direct consequence there is now not one concern that is able to maintain a proper reserve for renewals, or to provide necessary improvements in equipment or to spend capital in any scheme for the due carrying on of their public service. Proper maintenance is even now in question and year by year conditions must become worse unless the remedy is applied.

The chairmen also drew attention to the fact that the Argentine Government by its National Road Board has continued to construct roads running parallel to the railways, and to provide the free road-bed for competing vehicles not subject as yet to any control of tariffs, hours of labour, times of delivery, or weight of loads, all of which are meticulously exacted by the Railway Board from the railways. Argentina is now practically the only country in which there is no effective control of road transport, and the time has come to make it clear that under existing conditions the railways in Argentina will tend more and more to deteriorate and must lose their capacity to carry out their vital task unless a real effort is made to improve their position. The chairmen declare that they, who have all worked and lived in Argentina, are deeply concerned with its welfare. They know of the paramount importance to the country of the railways. They know that capital flowed there in good faith, that under the Mitre Law the return provided was 6·8 per cent., and that more recently under the Roca-Runciman Treaty good treatment was to be assured. They fully regret the sweeping aside of these obligations and the effect on Argentina's best customer, Great Britain, and they conclude by saying that no half-measures will meet the case, and that only an exchange of 13·50 pesos to the £ and a tariff increase of 20 per cent. may enable the railways to continue their good work of the past, and restore confidence in the integrity of the country.

Steamhammers and Nuts

A NOTICEABLE feature of Parliamentary proceedings in recent months has been the reaction of Government Departments to Questions asked in the House. The mere threat by a member to ask a Question in the House is frequently sufficient to secure immediate attention to a grievance (imaginary or otherwise) and the replies actually given to Parliamentary questions seem often to be characterised more by expediency than by merit. A typical example of the latter occurred on December 9 when, in reply to a Question by Mr. Ellis Smith, the Parliamentary Secretary to the Ministry of War Transport announced that instructions had been given that in future no hotel porter or other porter may reserve seats for intending passengers by placing luggage on them, unless the passengers are present when this is done. Mr. Ellis Smith's question originated in the fact that when three passengers from the Euston Hotel travelled on the 2.50 p.m. train to Stoke on November 26, their luggage was taken to the train by one of the hotel porters who placed it on three seats in one compartment and stayed by the compartment to watch the luggage until the three passengers arrived. Apart from the fact that the Parliamentary Secretary was in error in stating that instructions *had* been given, whereas we understand that a Direction in the form reproduced elsewhere in this issue reached the railway companies on December 12, the line taken by the Ministry in this instance makes it pertinent to enquire whether the use of a steamhammer to crack a nut really assists the war effort.

It has always been the practice for hotel porters to take luggage to trains for guests at railway and some other hotels which adjoin terminal stations, but it will readily be realised that the number of hotel staff which could be spared for such a task is very small, even under pre-war conditions, and in existing circumstances, with the present acute shortage of hotel staff, the number of seats reserved in this manner is obviously infinitesimal compared with the number of passengers travelling. It is certainly within the realms of possibility that in its attempt to avoid any trifling inconvenience which the hotel porter practice may have caused to passengers, the Ministry may well cause substantially more hardship to passengers. The privilege of handing one's luggage to a porter for placing in the compartment while a passenger secures his or her ticket or takes advantage of the amenities of the station is a very long-established one, and is shared alike by Service men and civilians. When two or more passengers are travelling together, one usually secures the tickets and the others accompany the porter with the luggage to the train. Under the proposed order, however, the porter must wait at the compartment until all the passengers in the party arrive, before he can secure the full number of seats required by placing luggage on the seats, and by this time, of course, it may very well be that some of the seats will have been occupied. In any event the porter will probably be detained at the compartment for appreciably longer than under the present arrangement, which will mean in effect that fewer porters will be available at any given time for attending to passengers as they arrive. Further, the necessity for keeping barrows of luggage on the platform until passengers are ready to take their seats may delay the loading of heavy luggage and will in any case add to the generally crowded state of the platform at the principal termini and thus adversely affect traffic operations.

It will be observed that the direction restricts the previous practice of hotel and railway porters and interprets the latter to include any uniformed member of "railway stations' staff." It is clear, therefore, that the execution of the instructions must be largely dependent on the good-will of all concerned, as the definition obviously includes many grades who are not members of a station's staff and who have the opportunity, if they desired, of carrying out the previous practice of porters. These men would embrace such grades as travelling ticket collectors, guards, restaurant car attendants, and uniform staff from the numerous railway premises other than stations. Further, it will be observed that staff not in uniform and passengers are not similarly restricted from reserving seats for other persons by placing luggage or other articles on the seats. Will this, we wonder, afford some enterprising individual an opportunity for establishing a seat reservation business on similar lines to that practised outside many theatres! It should also be borne in mind that the railway companies are under a statutory obligation to afford all reasonable facilities for receiving and forwarding "traffic," which has been held to include passengers and their luggage, and whether the Ministry of War Transport has powers under the Railway Control Order to prevent passengers enjoying a reasonable facility they have had for many years, may be a nice legal point. Some of these matters will doubtless be resolved in due course, as well as the reaction of the staff and public to the Order, but it seems fairly clear the passengers, including those travelling on Government business, are likely to experience considerably more inconvenience in obtaining seats than they have done in the past.

Reclamation *versus* Scrap

AN imaginative speaker at the semi-annual meeting of the American Society of Mechanical Engineers, held at Cleveland in June last, pictured the sum total of the United States war effort as equivalent to building 300 Panama Canals in a year. This work has to be done, moreover, in face of an unprecedented shortage of raw materials. The railways, confronted with a task of traffic handling on a scale hitherto unknown, not only by reason of the movement of munitions and personnel, but also because of unlimited diversion of traffic from sea and road to rail, are hit severely by this materials shortage, just at the time when constructional and maintenance demands are at their maximum. This, of course, is no new problem to British railways, but a brief review of the steps that are being taken by American railway managements to meet the situation is not without interest. In the congress referred to they were dealt with under three heads: conservation, substitution, and reclamation. Conservation calls for a complete change of policy in many important respects. In this machine tool and mass production age, the urge has been to economise in labour at the expense of abundant materials. Flame cutting plants have been developed to fashion complicated parts without forging out of plates or billets, but 50 per cent. and even more may have been cut away from the original material in the process, though a careful operator can reduce his waste by careful planning of his work. Machine tools, again, produce unlimited quantities of scrap, and in its least readily usable form as shavings. A remedy here lies in a return, in part at least, to forging. In the case of a number of articles hitherto flame-cut or machined from the solid, considerable economy in material can be secured by roughing the article out under the hammer, and then finishing to size with

the torch or machine tool. In recent years, again, to cut repair times to a minimum, replacement parts have been made too readily available, and there has been unnecessary destruction of pipes, pipe fittings, bolts, nuts, and many other parts which with a little ingenuity might have given longer service. "Make it hard to get" is a novel slogan, but necessary in these days as an incentive to material conservation. In trueing tyres, a grinder is preferable to the lathe, as the latter probably will not remove a cut less than $\frac{1}{16}$ in. deep at a time, where the grinder will save steel by removing no more than is absolutely necessary.

Substitution is another important field. It is estimated that in the United States there are 20 million car journal bearings in service, containing roughly 170,000 tons of copper. When worn out, these bearings are remelted and remade to the annual extent of one-quarter of the total. But the national demand for copper for war purposes may not leave all this copper in the possession of the railways. A new and lighter bearing design has therefore been evolved, saving 5 per cent. of the bronze previously used, and the maximum copper content of the bronze itself has been reduced by 8 per cent. A further change in design will presently cut the bronze requirement by an additional 12 per cent. In shoes and wedges for locomotive driving axle-boxes, malleable-iron castings faced with bronze bearing surfaces can be substituted for the solid bronze castings previously used. As to air-brake parts, a special committee of the A.A.R. has reported that 34 per cent. of the brass now used can be replaced by other more readily available metals. Copper pipe and tubing is being largely replaced by steel and wrought iron. The sudden shortage of tin caused by war developments in the Far East has been met by reducing the tin content in soft babbitt lining metal for journal bearing from 4½ to 3 per cent., and by progressively reducing the thickness of these linings from $\frac{3}{4}$ in. to $\frac{3}{16}$ in., and then to $\frac{1}{8}$ in.; but there is obviously a limit to which such economies can be carried if safety and dependability are to be maintained. In diesel engine bearings an alloy containing 98 per cent. of lead, hardened with calcium, and 1 per cent. of tin, has been used with success. In steel manufacture, alloys such as nickel, chromium, and vanadium have practically vanished, and molybdenum seems likely to follow suit; the use of manganese is also being sharply restricted. This development seriously affects locomotive design, for the lightness of alloy steel boiler-plates and motion parts has been an essential factor in much of the present locomotive-power development in the U.S.A. As to motion parts, every effort is being made to meet the need with the aid of quenched and tempered carbon steels. In the track 12 to 14 per cent. manganese alloy, which was largely used in American crossing construction, especially at the numerous level crossings of one railway across another, is now unobtainable, but considerable progress has been made in welding this difficult material, and so prolonging the life of crossings; for the future, heat treatments of ordinary rail steel are being developed as a substitute.

Reclamation wherever possible is now considered to be a patriotic duty. Much reclamation work is in reality repair; other reclamation consists in adapting old and worn material to new uses. Round iron and steel, such as brake beam rods, can be used for bolt manufacture. Crown stays from locomotive fire-boxes can be annealed and reworked to form shorter stays; staybolts can be cleaned of their lime and hammered into slabs for small engine forgings. Scrap spring steel has many uses, such as working into wrenches, spike pullers, cold chisels, and so on. Scrapped boiler tubes are in demand for fence-posts, sign-posts, and the manufacture of gates and locomotive pilots or cow-catchers. Driving axles of locomotives can be worked into piston-rods and other forgings; piston-rods can be turned down to serve on locomotives of smaller dimensions. There are other forms of reclamation too numerous to mention. It is emphasised that on a large railway the difference between treating old material just as so much scrap, and handling with proper care that which is reclaimable, may represent many thousands of pounds in loss or gain. The more fragile items of scrap are worth boxing or crating, as when they were delivered new, for if mixed with other miscellaneous scrap they may be damaged in transit to such an extent as to become irrecoverable. Centralisation of the reclamation work provides the best basis for efficient stock control, makes it possible to train specialists in the reclamation and repair of particular articles, and justifies the purchase of special equipment for the work. Economic reclamation is of such importance that it is worth while to conduct a careful study of the reconditioning prospects for each article, and also an educational campaign for the purpose of training foremen and others in the decision as to what ought to be scrapped, and what should give longer service. One American railway in a single year has achieved a net saving of nearly $500,000 from reclamation, and has in addition manufactured material at the reclamation plant to a value of $65,000 from scrap, with a further net saving of $27,000.

Fuel Economy on the Railways

AT the present time when every endeavour is being made to induce all sections of the community to make the most drastic economies in the use of fuel of all kinds, the steps which have been and are being taken by the four main-line railway companies to obtain the maximum efficiency in the use of the large amount of fuel they consume, are of more than usual interest. Because of their large yearly expenditure on fuel—the railway companies buy some 15,000,000 tons a year—the companies have for many years paid strict attention to the question of economical usage, and as soon as it became obvious that the coal position of the country was giving cause for uneasiness, the departmental officers of the railways were instructed to give special attention to the wartime aspects of the fuel problem with a view to the introduction of further economy measures wherever possible. Apart from general appeals to the staff, the following may be noted as typical of the measures that have been adopted: (*a*) restrictions on the use of fires and heaters; (*b*) substitution of lower wattage electric lamps where possible; (*c*) fitting of more economical fire grates, stoves, and braziers, and extended use of fire bricks; (*d*) regulation of central heating; (*e*) issue of instructions as to banking of furnaces; (*f*) discontinuance in certain cases of running hot water; (*g*) elimination of non-essential lighting. The decisions to postpone by one month the steam heating of carriages and the abolition of fires in the majority of railway waiting rooms have also enabled substantial economies to be effected.

In addition, individual action by the four main-line companies has been taken, and this necessarily has varied according to the organisation of the undertaking. In the case of the L.M.S.R. a Fuel Efficiency Committee was set up in December last to consider the possibilities of economy under such headings as: (1) alternative fuels; (2) requisition and supply arrangements; (3) operation of plant, including economy from reduction in temperature of buildings; (4) review of fuel-burning plants for manufacturing works; (5) gas leakage. This company also has a sub-committee which deals with the reclamation and economical usage of fuel spilt on the lines. Further, the company has in hand a scheme of refresher courses for firing instructors in order to achieve the maximum economy in the use of coal during the running of locomotives. On the L.N.E.R. inspectors have been appointed to investigate the possibility of further economy in the consumption of locomotive coal, and this company also has a Light & Water Control Office which checks the consumption of electricity and gas at every station and office throughout the system, and is in constant touch with all departments with a view to more economical usage. The G.W.R. has appointed fuel and salvage investigators with roving commissions to visit premises, yards, and sidings of all departments and has devoted considerable attention to the development of measures for securing economy and efficiency in the use of fuel in its manufacturing establishments. One example is that instructions have been issued that gas lighting over machines must be extinguished when the machines are not in use, even during short meal intervals.

The shops are frequently visited to make sure that the economy instructions are complied with and that consumption is kept to a minimum. The supply of coal and fuel for stations and offices is controlled by a rationing scheme; all requisitions are closely scrutinised and substantially reduced compared with previous years. As to locomotive coal, this company keeps four-weekly records of the consumption of coal by each of the company's engines in relation to the miles run and the work performed. These records are carefully watched by the Assistant to the Locomotive Running Superintendent, and enquiries are made into all cases where the consumption appears to be high and appropriate remedial measures are introduced where necessary. On the Southern Railway representatives have been appointed to make periodical visits to stations and depots to see that existing instructions as to fuel economy are observed. Alterations have been made to lighting arrangements at stations and signal boxes, and these have resulted in some cases to 33 per cent. in gas consumption and in another to 40 per cent. in the use of electricity. At a number of stations permanent black-outs have been replaced by movable blinds, so as to dispense with artificial lighting during daylight. Wherever possible alterations are being made to effect economy in the use of plant and machinery. One example of the manner in which this has been done has been the replacement by electric motors of a steam boiler at one works, which consumes 200 tons of coal a year. Generally, it may be said that the railway staffs fully appreciate the urgent national need for economy in the use of fuel in any form and their efforts in this direction have made no mean contribution to industry in its efforts to provide "the tools."

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

International Railway Relationships

London City Manager's Office, L.N.E.R.,
Rossmore Road, London, N.W.1. Dec. 7

To the Editor of The Railway Gazette

Sir,—All British railway delegates who have had occasion to attend meetings of some of the international associations and unions referred to in your issue of December 4 will, I am sure, welcome, and be most interested in, the review on which your journal has just embarked; and I would recommend that upon completion the review be published in booklet form.

It appears to be generally accepted that Great Britain will have to play a more prominent rôle in international affairs after this war is over, and I venture to suggest that this will apply no less in our international railway relationships; and such a booklet would, I think, prove most useful to delegates of the British railways attending the various international railway conferences when the days of peace return.

Yours faithfully,
L. H. K. NEIL,
London City Manager
(late Assistant Continental Traffic Manager)

Russian Locomotive Details Wanted

Storey's Gate, St. James's Park,
London, S.W.1. Dec. 4

To the Editor of The Railway Gazette

Sir,—The Council of the Institution of Mechanical Engineers is encouraging the preparation of a paper by Dr. G. V. Lomonossoff on condensing steam locomotives. Dr. Lomonossoff is well known at the institution, and doubtless to many readers of The Railway Gazette as an authority on locomotive matters. It is his intention to include some details of an experimental type of 2-10-0 condensing locomotive (class SO^h), which was being tried in Russia shortly before the present war, and which was fitted with a special design of tender to accommodate the condensing apparatus.

Because of present-day conditions, Dr. Lomonossoff is unable to obtain the copy of the Russian Government's publication "Russian Transport during the Third Five Year Plan" (Transjeldorizdat), 1939, giving the report of the performance of the 2-10-0 locomotive, and I shall therefore be grateful if you will allow space in your columns to inquire whether any of your readers know where a copy of the official Russian report is available for consultation, or whether they may know of any drawings of the locomotive. Any help in this direction which might be forthcoming would be most welcome.

Yours very truly,
H. L. GUY,
Secretary, The Institution of Mechanical Engineers

"B.B.C. Off the Rails"

London & North Eastern Railway,
HQ1 (via Hitchin). Dec. 7

To the Editor of The Railway Gazette

Dear Sir,—In fairness to the B.B.C. I must answer the criticisms that appeared in your editorial under the above heading in The Railway Gazette of December 4, because the script of the broadcast in question was compiled with the guidance of the L.N.E.R.

First, neither the compiler of the script, Mr. Stephen Potter, nor the L.N.E.R. was consulted by the editorial staff of the *Radio Times*, before publication, as to the accuracy of the advance notices of the broadcast, otherwise the slip mentioned would not have occurred. You will have observed, however, from the current issue of the *Radio Times* that a handsome apology for the inaccuracy of the advance notices has been published. I hope, though, that some of your overseas readers will not have been misled by your statement that no engines exist of either name, that is, *Silver Jubilee* or *Coronation Scot*, as, of course, the former is borne by No. 5552 of the L.M.S.R.

Secondly, you imply that for a northbound 500-ton express to attain 60 m.p.h. by Finsbury Park is something approaching a miracle. Actually such an occurrence, if unusual, is not unknown, although obviously the writer of your editorial has not been present on these occasions.

Thirdly, the script made it clear that the Scrooby water troughs are south of Doncaster, but unfortunately the narrator did not follow the script word for word at that point. The result was that the impression was given that the troughs are north of Doncaster, the only blemish, I think, in an otherwise excellent commentary.

To your fourth criticism, that of the use of the Whyte notation in 1897, it is only fair to plead "broadcaster's license." I doubt whether one *railwayman* in a thousand would remember that in 1897 the wheel arrangement of locomotives was not described in the manner with which we are so familiar today. As for your schoolboys, many of whom have probably never seen a Stirling "Single," I feel that to describe it as a 4-2-2 has some value, notwithstanding the anachronism thereby perpetrated.

Yours faithfully,
GEORGE DOW,
Information Agent

A Signalling Paper at the Civils

Southern Railway,
Deepdene Hotel, Dorking, Dec. 14

To the Editor of The Railway Gazette

Sir,—With reference to the editorial in the current issue of The Railway Gazette, headed "A Signalling Paper at the Civils," you state that "since 1922 there has not been any paper read before the Institution touching really modern trends in signalling except those read by Mr. Tattersall himself to the Yorkshire Association of the Institution some twelve years ago."

You have, however, overlooked a description of the first really substantial installation of colour light signalling in this country which I gave in a paper entitled "The Remodelling of Charing Cross and Cannon Street Stations" read at the institution in 1926.

Yours faithfully,
G. ELLSON,
Chief Engineer

Railways and Roadways

51, Home Close, Wolvercote,
Oxford. Nov. 18

To the Editor of The Railway Gazette

Sir,—A good deal has been written about the competition of road transport with rail transport whereas in reality there should be no antagonism between them. Road transport has been in existence from time immemorial whereas rail transport only had its beginnings about 100 years ago. Before the advent of the railways everybody and everything went by road or perhaps by canal, as there was no other means of transport; after the construction of the railways, however, the time of travel was shortened, the comfort increased, and the cost reduced. Therefore long-distance transport by rail and very short distance transport by road was the order of the day. The railways were the vital link in the scheme.

With the invention of the pneumatic tyre, the petrol engine and later the diesel engine the road became a serious competitor, the motor coach and the motor lorry offered a cheaper and more frequent service, of which the public was not slow to avail itself, with subsequent loss to the railways. Attempts were made to put the railways on a better footing by amalgamations and reshuffling the stocks whereas what was required was a complete reorganisation.

If a railway map is studied, it will be found that the stations are a few miles apart; the idea apparently is that the goods would be collected within a mile-and-a-half radius of the station, conveyed to another station by rail, and finally delivered by road within a mile-and-a-half radius. Each station required its staff, consisting of station master, clerks, porters, and so forth, whose sole occupation in some cases was the meeting of a few trains each day and attending to a small amount of goods traffic. When wages were low and the railways had a monopoly profits were made. The introduction of the road motor however increased the radius of road transport many times and with their low overhead charges the road transport companies were able to undercut the railways in all spheres except the hauling of heavy traffic long distances.

It does not appear to have occurred to the railway companies that the old system must go and a new one be evolved. The obvious solution to the problem is to consider the most economic working distances for rail and road transport for passenger and goods traffic and adapt the railway system to it.

Taking into consideration most kinds of goods traffic, it would be safe to say that, at present, road haulage is more economic than rail transport within a radius of at least 20 miles. That is to say that goods stations instead of being a few miles apart should be at least 30 miles apart, and serve prescribed areas. This would necessitate the closing down of all minor goods stations and the conversion of the major goods stations into goods depots, and as some of these are at present in the centre of a large city it might be expedient to move them to a more suitable site in the outskirts.

Goods traffic may be considered under three headings:—

(1) Heavy traffic such as minerals, machinery, and the like in wagon or train loads, shipped at the producer's siding and delivered at the customer's siding.

(2) Wagon, container, or motor truck loads where no sidings are available.

(3) Individual packages and parcels.

In the case of class (1) it is difficult to see how road transport can compete with rail transport, especially if the goods have to be hauled long distances. Therefore no alteration is proposed in this respect. Two methods of transport suggest themselves in the second category, namely, direct delivery by road or by combined rail and road. The choice will depend largely on the distance, a factor which should be taken into consideration in selecting the sites of the various goods depots.

With regard to the last class of goods, which incidentally is the best paying end of the goods traffic, it might be advantageous to establish receiving offices where packages and parcels could be collected and delivered by motor within the area or conveyed to the nearest goods depot for rail transport to another area.

Complete reorganisation is required in the passenger traffic department, evolving eventually a new system of trains and their running. The chief difficulty is the shortage of modern corridor or interconnecting coaches and the mass of obsolete compartment coaches still possessed by the railway companies. These defects could be remedied temporarily by the conversion of the compartment coaches into interconnecting coaches, and gradually evolving a more suitable type of coach for the main lines and the busier branch lins and the utilisation of more motor coaches.

In the first place the whole railway system would be mapped out into main lines and branch lines and all stations except those serving large towns and junctions either closed or converted into " halts." On the main lines two classes of trains would be run, expresses and slow trains, the latter would act as feeders to the expresses. The express trains would stop at prescribed stations only, and the slow trains would stop to signal at any halt. Conductors would be on all trains to collect fares or tickets could be purchased at any station. The suggestion is that there should be a number of short trains at frequent intervals rather than the long infrequent trains in vogue at present as the latter waste so much time in starting and stopping and standing in stations.

By way of illustration let us consider the main line from London to Carlisle : a tentative suggestion would be for an express to stop at Rugby, Crewe, Warrington, Preston, Lancaster, Penrith, and, finally, Carlisle. Suppose a passenger wished to travel from a halt between Rugby and Crewe to a halt between Preston and Blackpool. He would flag the slow train at his halt change to the express at Crewe, and finally change at Preston to the stopping train to his halt. The expression " slow train " does not mean that they would be slow like some of the present trains but merely that they would stop at halts to pick up or set down passengers and luggage. The actual time spent at halts need not exceed 30 seconds. To summarise :—

(1) All railways to be brought under one control.

(2) The system to be mapped out in main lines and branch lines.

(3) Goods depots to be set up at convenient centres 30 miles or more apart. All other goods stations closed. Each depot to serve a prescribed area.

(4) Heavy traffic from siding to siding as heretofore.

(5) Container or motor truck loads to be sent either direct by road if within a prescribed area, or by road, rail, road if to another area.

(6) Parcels and packages to be collected by motor from producers' premises (or collecting office) and delivered as in (5) above.

(7) Passenger stations involving station staff to be at important places and junctions only. All minor passenger stations to be converted into halts.

(8) A frequent service of short express trains to be run on main lines and important branches stopping at important places or junctions only. Slow trains stopping on demand at any halt to be run on all lines to act as feeders to the expresses.

(9) All trains to be eventually of the corridor or interconnecting coach type.

(10) Tickets to be issued at passenger stations or fares to be collected on the trains.

Yours faithfully,

R. B. FORSTER

[Professor Forster does not add any very original thoughts to the controversial road-rail problem. Our correspondent is apparently unaware of the strenuous efforts made by the railway companies before the war to secure equality of treatment with road hauliers in the matter of the regulation of rates and charges. He would also, we imagine, find scant support from road hauliers for any suggestion that the economic limit of road transport, compared with rail, is about 20 miles. Moreover, we doubt whether he has realised that the adaptation of major goods depots and their removal from the inside of large cities to the outskirts would involve a vast amount of capital which would first have to be raised, and then remunerated. Its remuneration under the conditions which existed immediately before the war would be prejudiced by the series of statutory restrictions and regulations to which the railways alone are subject. So far as passenger traffic is concerned, we do not know the basis for his statement that the companies' chief difficulty is the shortage of modern corridor stock, and his suggestion that stations should be converted to halts without staff overlooks the fact that a very considerable quantity of parcels traffic, to say nothing of milk, mails, horses, and other " tail " traffic, has to be dealt with at such stations. His proposal for the interposition of a large number of slow trains between express trainsis more academic than practical, and he adduces no arguments in support of his suggestion that there should be unified control of the railways.—ED., *R.G.*]

Euston-Waterloo Train Services

London, W.C.1. Dec. 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In the course of recent correspondence in your columns concerning train services of 1880, various correspondents made reference to services operated by the old L.N.W.R. between Euston and Waterloo. Moreover, Mr. P. E. Davis, in your issue of November 27 (page 515), said that he was unaware of any such service in the year 1878. Actually, there were two services linking Euston with Waterloo, separated by a period of more than seven years, and it is the second one that Mr. Davis apparently overlooked. Some details were subsequently given by Mr. G. A. Sekon. The following seems to summarise the position.

In July, 1865, a short-lived L.N.W.R. service was begun between Euston and London Bridge, *via* Camden, Kilburn, Addison Road, Chelsea, Battersea, Vauxhall, and Waterloo. At the last-named point the connecting line ran between platforms 4 and 6 in the L.S.W.R. station, crossed the circulating area, and passed over Waterloo Road on the bridge now used as a passenger footway. In February, 1867, Cannon Street was adopted as the terminus instead of London Bridge, but the workings through Waterloo lasted only until the end of December, 1867. This service was the only regular one to use the connection, and the rebuilding of Waterloo (L.S.W.R.) Station, which was completed after the last war, resulted in the removal of the single connecting spur. For the one month of January, 1868, the L.N.W.R. worked from Euston to Waterloo only, and the service was then suspended until 1875.

In July, 1875 (according to my records), after considerable discussion, the Willesden—Waterloo service was resumed, with eight trains each way daily. On normal days the arrangement worked well, but at busy seasons, when Waterloo was heavily overcrowded, the L.N.W.R. trains were not viewed with a friendly eye by the L.S.W.R. This seasonal opposition eventually caused the withdrawal of the service in January, 1893.

Yours faithfully,

CHARLES E. LEE

Train Services in 1878

60A, Green Lane, Northwood,
Middlesex. Dec. 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—You may be interested to have a note as to the through bookings from the District to Midland Railway. The May, 1878, Midland timetable showed through bookings, first and third class, between Mansion House and *the principal stations in Scotland* ; also through bookings from District Railway stations (Blackfriars to Earls Court inclusive) to Edinburgh and Glasgow. There were also, of course, bookings to the suburban Midland system and principal main-line stations, but it is interesting that prominence is given to Scotland. A ticket from Sloane Square to Glasgow would be valuable nowadays to collectors !

As regards the recent correspondence in your columns, we must acquit the Midland Railway of any intention to make the public think that its trains ran through to Mansion House ; *Bradshaw's* heading to the service was merely condensed to save space.

Mr. Sekon said in his letter to your issue of October 23, that the Midland formerly ran through from St. Pancras to Richmond and *that the service was in* 1878 *" diverted to Earls Court."* The latter statement is not correct. In April, 1878, and previously there was a service to Harrow Road from Child's Hill, and there is a note in the Midland timetable of May, 1878, announcing the new service to Earls Court, saying that " The Harrow Road and Child's Hill service will be withdrawn on and from same date." (May 1, 1878.) I doubt if Midland trains *ever* ran to Richmond ! If so, when ?

Yours faithfully,

REGINALD B. FELLOWS

[Our records show that a Midland Railway service was begun on August 3, 1875, between Moorgate and Richmond, *via* Cricklewood and the N. & S.W.J.R. to South Acton, and thence over the L.S.W.R. to Richmond. It was made possible by the opening on the same date (August 3, 1875) of the Midland Cricklewood-Acton line. The service received little support, and was withdrawn on February 1, 1876. The 1878 " circle " service amounted to a reinstatement, but with a diversion from South Acton over the District route to Earls Court.—ED., *R.G.*]

Publications Received

Fuel Testing : Laboratory Methods in Fuel Technology. By Godfrey W. Himus. London : Leonard Hill Limited, 17, Stratford Place, W.1. 9¾ in. × 6 in. × 1 in. 288 pp. Price 21s. Fuel testing needs to be carried out for two reasons ; the first is to determine whether one is getting value for money, and the second to obviate the possibility of getting supplies of coal unsuited to the type of steam boiler in use. With given combustion chamber and grate design the permissible variation in fuel quality and, in particular, of the ratio volatile to non-volatile matter is relatively small, so that this point needs careful watching, especially under present day conditions, when uniformity in supplies seems impossible to guarantee. The book under review is the second edition of an authoritative and comprehensive study of the whole subject of fuel testing. Liquid and gaseous fuels are fully discussed as well as coal, but it is the latter fuel which calls for most detailed investigation. The determination of the proximate analysis, the ultimate analysis, the calorific value, and the fusion point of the ash are all of the utmost importance in enabling the suitability of a given fuel to be gauged. Separate chapters are given to describing the latest standard methods for ascertaining all these particulars with others of less immediate significance. The new edition has enabled recent revisions in British Standard Specifications to be taken into account in describing methods of sampling and testing.

The Steam Locomotive : Its Theory, Operation, and Economics including Comparisons with Diesel-Electric Locomotives. By Ralph P. Johnson. New York, U.S.A. : Simmons-Boardman Publishing Corporation, 30, Church Street. 9½ in. × 6 in. × 1 in. 502 pp. Illustrated. Price $3·50.—As the subtitle of this book indicates, an attempt has been made to deal with the characteristics of the finished machine as a whole and component parts are described only so far as this is necessary to show the way in which they contribute to the final result. The theoretical exposition is of the simplest and does not convey any idea of the vast amount of work that has been done by different investigators to arrive at suitable formulæ for the use of designers and operators. However, one feels that the author is setting down rules that he himself has found sufficiently accurate for practical purposes, and, given sufficient faith in the author's judgment and experience, one would be inclined to consider this book as being among the most immediately helpful handbooks on locomotive theory yet published. Without this faith, however, one might be inclined to suspect that certain aspects of the subject, notably cylinder performance and air resistance, had been over-simplified. On page 112, for instance, is a formula for the water consumption of a locomotive that takes no account whatever either of the heat lost by the steam to cylinder walls on admission or of wire-drawing effects. It may be the author's experience that one of these factors nullifies the other.

In comparing steam and diesel locomotives the author shows sound knowledge of the essential differences but there is just one statement which might with advantage have been supported by practical testimony. This reads : " Diesel-electric locomotives have constant torque characteristics and there is a complete absence of unbalanced forces on the rail. Such a locomotive is therefore easy on the track and roadbed, which is reflected in lower track-maintenance costs." We are not so sure about this because, in general practice, the electric motors are axle-hung, and their weight is therefore largely unsprung weight. This results in very severe " battering " of rail joints, points and cross-overs, and it is significant that in continental electric locomotives the motors are usually frame mounted with a jack-shaft or quill drive. The hammer-blow effect from the steam locomotive is injurious when for any reason it becomes excessive and the wheels actually lift off the track, but so long as the variation in wheel loading follows a regular sinusoidal law there is nothing indefinite about the forces brought into play, and they can be kept within any reasonable limit by careful design. The buffeting given to the track due to the use of axle-hung electric motors is quite indeterminate ; consequently a statement to the effect that it is less injurious than hammer-blow needs to be supported by trial data. In the absence of such support we remain sceptical.

Notwithstanding these criticisms we feel that the book is a first-rate introduction to a complex study. It will be of immense value to engineers not conversant with the theoretical aspect because it is, in a broad way, very sound.

A History of the Texas Railroads. By S. G. Reed, Houston, Texas : The St. Clair Publishing Company. 3702, Mt. Vernon Street. 9½ in. × 6¼ in. × 1⅞ in. 822 pp. $3.50 net.—It is a remarkable fact that comparatively few persons outside of the two Americas have any detailed knowledge of the history of the past hundred years or so which has gone to the making of the States and countries of the New World as they now exist. For example, Texas, which is the largest State in the U.S.A., and the one whose official nickname (the Lone Star State) is perhaps the most widely known outside America, is seldom regarded as a territory with an interesting story which has included Government by Spain and Mexico ; a brief independent existence as a republic ; and nearly a century of development as one of the States of the American Union.

Its transport history is long and complicated, but intensely interesting, and might easily have been unrecorded but for the arduous labour of love by Mr. S. G. Reed. In 1888 he began a railway service which lasted for 49 years, and during this long period he saw enormous developments, and made contacts with many of the pioneers, whose stories he faithfully preserved. In his retirement he has classified this vast amount of information and has prepared the present volume, which is noteworthy for its judicious selection of material. Despite its title, the book is not confined to railways, but summarises developments in all fields of transport. The progress of the State was so interwoven with that of its transport (primarily its railway system) that the book is in many respects a history of Texas, especially in respect of the earlier period. Mr. Reed acknowledges his indebtedness to an Englishman—Doctor William Kennedy—who wrote a history of Texas in 1841, during the ten-year period when the territory was an independent republic. Mr. Reed says that this was not only one of the earliest histories of Texas, but also one of the best, and he makes liberal quotations from it.

Apart from the introductory material about transport under the rule of Spain and Mexico, and during the period of the republic, the general structure of this volume is provided by devoting one chapter to each of the individual railways. Nor are abortive schemes ignored, and a special chapter is concerned with " Roads chartered but not built." It would be difficult to criticise the conscientious work and interesting method of presentation which the author has devoted to the preparation of this encyclopædic volume, but we feel that there are two omissions which may deprive the book of the wide circle of readers that it deserves. One is that it is unillustrated, and the other is that it lacks a map. Illustrations would have lightened the " heavy " appearance of the mass of solid printing ; and a map would have brought the material within the comprehension of those unfamiliar with the geography of Texas.

Map of the Railways of Spain and Portugal. (Mapa de los Ferrocarriles de España y Portugal.) Published by A. & J. Imedio, Plaza de las Cortes 3 Pral. Madrid. On paper, in two sizes—84 cm. × 80 cm. and 125 cm. × 100 cm. (33 in. × 31½ in. and 49 in. × 30⅜ in.) Prices, 15 pesetas and 30 pesetas.—With the nationalisation of all the Spanish broad-gauge railways, and the grouping of the narrow-gauge, in 1941, a new map was an obvious desideratum. The publishers of the " Anuario de los Ferrocarriles " (Spanish Railway Yearbook) reviewed in our issue of August 29, 1941, at page 209, have now met the want with the publication of a new edition of their map. The new map shows in distinctive colours the broad and narrow gauge lines, indicating double-track and electrified section, and showing the position of every station. The map is printed in two sizes, and both in lettering and colouring is very well finished ; it is one of the clearest railway maps we have seen.

Fuel Economy Review : Volume XXI, 1942. London : The Federation of British Industries, 21, Tothill Street, Westminster, S.W.1. 10¾ in. × 8½ in. 100 pp. Price 2s. 6d. net.—As its name suggests, the " Fuel Economy Review " deals with subjects which are of special interest at the present time. Articles of particular topicality in the 1942 issue are those on the operation and maintenance of producer-gas plant for industrial purposes, and the selection of bituminous coals for use in gas producers ; there is also a short note on gas-producer calculations. Many aspects of fuel economy and efficient fuel practice are covered in this issue, including economy in the industrial use of electricity, the removal and utilisation of condensate, the efficient operation of heating furnaces, and water treatment for modern steam-generating plant. Notes are included on indigenous liquid fuels, and the problem of pumping hot feed-water.

U.S.A. Railway Statistics.—The Association of American Railroads has issued its Statistical Summary No. 26, dated September, 1942, in which are summarised the statistics, derived from the returns of the Interstate Commerce Commission, of all the Class I railways of the United States. Class I railways are those with yearly operating revenues of over $1,000,000, and include approximately 95 per cent. of the total railway mileage of the country, earning about 97 per cent. of the total revenues. The figures are given for the 13 calendar years ended December 31, 1929, to 1941 inclusive, and include, on 13 sheets, all the essential statistical figures relating to the operation of the railways. A review of U.S.A. railways statistics was published in THE RAILWAY GAZETTE of February 13, 1942, at pages 219 and 232. The summary is issued by the Bureau of Railway Economics of the association, at Washington, D.C.

The Scrap Heap

"NUTS"

A railway signalman was sent to prison for six months recently after pleading "Guilty" to having loosened the nuts and bolts of a number of fishplates on the line between Chorley and Blackburn.

* * *

During the season June 8 to October 31, the L.N.E.R. carried 22,500 tons of tomatoes from the Lea Valley; 21,465 tons were conveyed by goods train in 7,520 wagons and the balance by passenger train. The whole of the traffic was handled at the three stations, Broxbourne, Cheshunt and Waltham Cross, and the stationmasters and staffs at these places have been thanked by the Tomato (Primary Distributors) Association Limited for their help.

* * *

Recently, while turning out some old photographs, an L.M.S.R. employee came across a snapshot taken on the L.M.S.R. line at Crewe eleven years ago. In the background of the picture he saw a pile of scrap rubber hosepipe. Investigation showed it still to be there; it had been dumped many years ago as "unsaleable waste" and since had been overgrown and hidden. The discovery has increased by 30 tons the weight of rubber salvaged by the L.M.S.R.

* * *

THE "CORONATION" TANKS

During a recent blackout journey through Buckinghamshire, we were trying to recall occasions, during the past fifteen years or so, on which suburban trains from Marylebone have been worked by locomotives other than Class "A5" 4-6-2 tanks (formerly of the Great Central Railway), also called "Coronation" tanks, because of their introduction in 1911. We can remember only odd Cup Final weekends, when work on the shuttle services round the Wembley Stadium loop was shared with the Class "L1" 2-6-4 tank engines, and a brief period early in 1926 when some standard L.N.E.R. 0-6-2s appeared on the then new Watford trains. The demands of the Watford service also brought an *ex*-G.N.R. 0-6-2 to Marylebone for a fleeting sojourn, but the facility was short-lived, and, since its withdrawal, the "A5s" in our recollection have had it all their own way, and for some years now have increased their duties by taking over Metropolitan line trains north of Rickmansworth. Although they divide these tasks with *ex*-Metropolitan locomotives, we have no personal knowledge of one of the latter being allowed to invade the exclusiveness of Marylebone on a suburban passenger train in spite of their being now under L.N.E.R. ownership. B. K. C.

* * *

The labour-management relations of the Canadian National Railways constitute a co-operative model. As part of the machinery for carrying out our labour policy, we have what is known as the Union Management Co-operative Movement, and in our shops and roundhouses, and in our maintenance of way centres, the representatives of 40,000 organised men sit down each month with the management to discuss their problems and their work.—*Mr. R. C. Vaughan, Chairman & President of the Canadian National Railways, in an address to the Empire Club at Toronto on October* 1.

* * *

A quarter of a million tons of ballast for the construction of runways for four new aerodromes are being unloaded at the rate of 1,000 tons a day at a small Midland village goods yard, built only for peacetime agricultural and general merchandise needs, but transformed by the L.N.E.R. into one capable of clearing sand and gravel at the rate of 100 wagons a day. The ballast is thrown into a hopper, which in turn discharges its contents on to an endless conveyor-belt driven by an internal combustion engine; as the ballast leaves the belt it falls into waiting lorries. So rapid is the turn-round that the locomotive which brings in the loaded trains is able to pick up a large number of empty wagons after little over an hour, including them in a completed train for the return journey.

* * *

As early as the first of June last, the road was opened for travel and transportation from *Harper's Ferry* to a point opposite the town of *Hancock*, a distance of 41½ miles, and has ever since been in successful operation. . . . Of the *railway track* the wood work to *Cumberland* is finished, and on 34 miles West of *Hancock* the iron rails are laid down and the road finished. On the remaining 21 miles necessary to complete the road throughout the entire length, the force employed is actually laying the rails upon one mile each day. . . . The board, is therefore, warranted in saying that the road will be finished and put in operation to Cumberland, between the first and the tenth of next month.—*From the 16th annual report of the Baltimore & Ohio Rail-Road Company, dated October*, 1842.

* * *

TAILPIECE

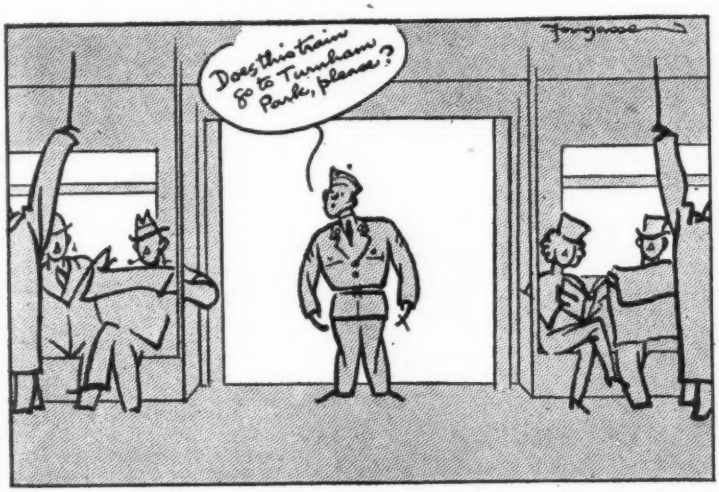
Road schemes form part of Japan's policy in China.

You plot the roads on China's map,
The Rising Sun has willed them,
And it behoves you, gentle Jap,
To modernise or build them.

Their easy grades will so enhance
His speed who rides or legs it,
And better still, their smooth expanse
Will expedite your exit.

E. C.

PASSION FOR HELPFULNESS



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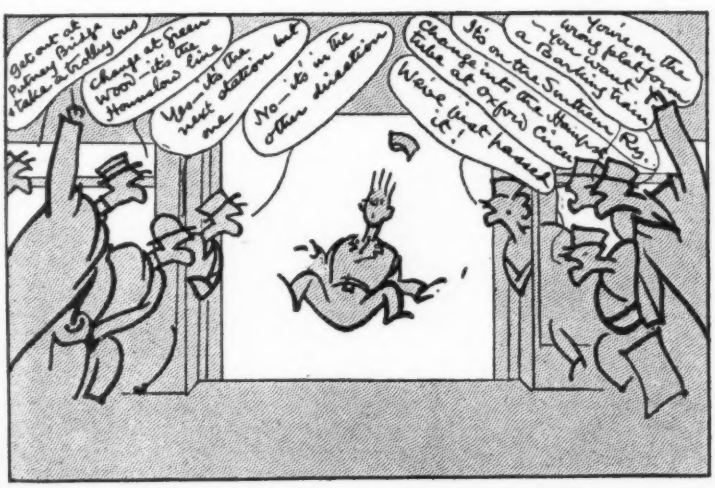

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[Reproduced by permission of the proprietors of "Punch"

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

House-Ownership Scheme

By the close of the financial year ended March, 1942, 1,046 applications for loans under the South African Railways & Harbours administration's house-ownership scheme had been authorised from the amount of £1,000,000 set aside in the previous year's estimates, the third allotment of funds for this purpose.

In pursuance of its policy of assisting members of the staff to acquire their own homes wherever practicable, the administration gave consideration during the year to a scheme for the benefit of lower-paid workers who, for various reasons, have been unable to take advantage of the house-ownership scheme proper. Under this plan, railway workers and graded staff earning up to 10s. 6d. a day will be granted loans for housing purposes at an interest rate of 1¼ per cent. a year; and graded staff earning up to £17 10s. a month will be enabled to obtain loans at the usual rate of 3½ per cent. In either case, the loans will be insured against the death of the applicant to ensure that the property becomes the unencumbered asset of the dependants in the event of the applicant's death before retirement from the service. Arrangements have been made also whereby only a portion of the loans granted need be redeemed by the applicants during their period of service, and any balances outstanding at the date of their retirement may be met from their annuity commutations, or by obtaining a loan from a building society or other source and then liquidated over a period which will afford easy repayments.

INDIA

Riot Damage

Official information is meagre concerning interruptions to railway services as the result of weather conditions or riots. All-India Radio announced that the damage to railway properties in the disturbances since the arrest of Ghandi is not less than one crore of rupees. The worst sufferers were the Bengal & North-Western and the East Indian Railways. Damage on the North Western Railway was negligible. On the worst-affected lines of the East Indian Railway trains were convoyed; as many as five were run, one behind the other, in the same block section.

In the Council of State debate on the state of the country, Sir Mohd. Usman said that after the arrest of Congress leaders on August 9 violence and sabotage in Bombay, Madras, the Central Provinces, Bengal, the United Provinces, and Bihar were directed specially against the railways, posts & telegraph service, and police. The Punjab, Sind, and North Western Frontier Province were free of attack. In all, 258 railway stations were destroyed, of which 180 were in Bihar and East United Province. There were 40 trains derailed, and the casualties to railway staff included one killed and 21 injured. Much damage was done to locomotives, rolling stock, and permanent way.

Of the 550 post offices attacked, 50 were burned out and 200 seriously damaged. There were 3,500 instances of wire-cutting. One lakh of cash and stamps were stolen. In addition, 70 police stations and 140 other Government buildings were attacked. In the Nagpur district of the Central Provinces the damage is estimated at Rs. 1,25,000. In Delhi, the damage to buildings amounted to some Rs. 8,86,601. [Some earlier information, based on press reports, was published in our October 16 issue, page 378.—ED., *R.G.*]

The Viceregal Train

The Viceregal train, which was formerly finished in all-white livery, has now been turned out in the style of the North Western Railway, namely, red, similar to that used by the L.M.S.R.

Class "N" Oil-Burners

First tests of "N" class 2-10-0 oil-burning locomotives, now fitted with mechanical stokers, have proved very successful.

Derailment at Chalisgaon

There were 12 passengers killed and 40 injured when the Peshawar express which left Bombay on October 2 was derailed at 4 a.m. near Chalisgaon Station on the Great Indian Peninsula Railway. All India Radio reported that the cause was the removal of a rail.

Rebuilding Three "XG" Class Engines

The three "XG" class 0-8-0 locomotives with 23-ton axle loads on the North-Western Railway are being rebuilt as 2-8-2 engines.

Railway Receipts

The Finance Committee of Indian Railways has reported gross receipts to September 10, 1942, of Rs. 7,75 crores more than last year, and Rs. 15,93 crores more than in the corresponding period of the previous financial year, 1940-41. Working expenses up to July 31, 1942, were Rs. 19,69 crores, or Rs. 150 lakhs more than in the previous year, and Rs. 152 in excess of the Budget estimate.

In the three 10-day periods after the civil disturbances, coaching earnings showed slight increases, but goods earnings dropped Rs. 53 lakhs on the East Indian Railway and Rs. 6 lakhs on the Bengal & North-Western Railway.

UNITED STATES

Power Reversing on Locomotives

The wide powers exercised by the Interstate Commerce Commission over railways in the United States are illustrated well by the ruling laid down some time ago as to the compulsory installation of power reversing-motion on steam locomotives, to be completed within certain specified periods. Recently, on a petition from the companies concerned, the I.C.C. extended from September 1 to October 1 the final date in the cases of the Western Pacific, Chicago & North Western, Southern Pacific, Chicago, Rock Island & Pacific, North-Western Pacific, and several minor lines, and agreed to hold a conference in Chicago to decide what further postponement, if any, might be permitted. The difficulty of the railway companies at the moment is that of obtaining the necessary materials and labour to carry into effect orders of such extensive scope.

A Strike Aftermath

An aftermath of the recent Toledo, Peoria & Western Railroad strike is seen in proceedings which have now been instituted, in the district court at Peoria, Illinois, against the leaders on both sides (see THE RAILWAY GAZETTE of September 25). Mr. George P. McNear, junr., President of the line, has been indicted, with his company, for violating certain sections of the Railway Labour Act. On the other side, Mr. Paul Brokaw, Publicity Agent for the Brotherhood of Locomotive Firemen & Enginemen, Mr. H. J. Dilley, a former fireman, and Mr. Delmar G. Newdigate, Local Chairman of the Brotherhood of Railway Trainmen, have been charged with violating the Federal Train-Wrecking Act and the National Explosives Act, the former by attempting to wreck a T.P. & W. train near Eureka, Illinois, and the latter by having in their possession explosives, including dynamite, detrimental to public safety, without holding any licence for such possession.

Grade Separation at Dunkirk, N.Y.

A comprehensive scheme of grade separation through the City of Dunkirk, 41 miles west of Buffalo and near the north-western border of New York State, has been completed recently by the New York Central System at a total cost of approximately $3,000,000. The line concerned is the main line from New York to Chicago, which at this point is four-tracked, with one westbound and two eastbound running lines and a fourth track serving various local industries. The four lines have been elevated on to an embankment over a distance of 1¾ miles, and the approach grades do not exceed 1 in 300 in steepness.

Before this there were 13 level crossings within city limits; six of these have been closed, one has been replaced by a pedestrian subway, and over the remaining seven the railway is carried by overbridges. In the centre of Dunkirk the N.Y.C. is joined by a branch of the Erie Railroad, which now is brought up to a junction with the elevated lines on a gradient of 1 in 48; another new track, on an inclination of 1 in 67, leads down to various works at the lineside. Actually, the station building at Dunkirk hitherto used by the N.Y.C. has been that of the Erie, at the extremity of the latter's Dunkirk branch, and this is connected by a passenger and luggage subway with a new N.Y.C. platform, 1,200 ft. long, roofed for 311 ft. of its length, between the two centre tracks on the embankment. It is this station arrangement which, as mentioned in an editorial note in THE RAILWAY GAZETTE of November 13, the New York State Public Service Commission regards as inadequate, and which has been the subject of a recent order requiring the construction of new station facilities designed to serve adequately the needs of Dunkirk. The cost of the improvement has been increased by the fact that a number of buildings on the site of the embankment in the centre of the city had to be removed, and provision made for their reconstruction elsewhere.

ARGENTINA

Fuel Rationing and the Railways

The fuel rationing scheme which came into force in October, 1941, is creating serious difficulties for the Argentine railways; the quotas allotted to them, which have been fixed at 70 per cent. of the coal, and 85 per cent. of the heavy oil-fuel, consumed by each company in 1940, are in many cases inadequate for their requirements. In this connection, two companies, the Buenos Ayres & Pacific Railway and the Compañia General de Ferrocarriles en la Provincia de Buenos Aires, have addressed separate notes to the Director-General of Railways, explaining the difficulties with which they are faced.

Statement of Compañia General

In its memorandum, the Compañia General de Ferrocarriles en la Provincia de

Buenos Aires points out that the fuel quota allotted to it under the rationing scheme is inadequate for its needs. The note states that the work of transforming coal-fired locomotives to oil burners was undertaken as soon as the coal shortage made itself felt. But, as traffic movement over the company's lines was below normal during 1940 and part of 1941, during which time the coal stocks were sufficient, the change-over was carried out gradually; there was no urgency about recourse to oil fuel and the locomotive staff had to be trained in the new method of firing. The company states that it will be obliged still further to reduce its coal consumption, reserving it exclusively for passenger trains, which demand strict adherence to regular time-tables, and for other special services such as cattle-transport, for which wood fuel is unsuitable. It explains that it is not claiming the 250 tons of petroleum a month required for the efficient operation of its oil-fired locomotives; but urges that it be guaranteed a regular monthly quota of at least 150 tons, wherewith to maintain its most important services. The note mentions that, as the company's system does not traverse any forest zones, the average distance over which hardwood fuel has to be hauled before it can be utilised is approximately 1,200 km. Apart from the cost, this lengthy haulage involves a serious drain on the rolling stock at a time when it is essential that it be used to the best advantage.

Demand for Higher Wages

The executive committee of the Railwaymen's Union has sent a note to the Board of Managers & Railway Representatives requesting an increase in salaries and wages in view of the greatly-increased cost of living, and pointing out that the wages at present in force are, with few exceptions, the same as those ruling 16 or 17 years ago. The note asks for an increase based on the scale paid to commercial and industrial employees, as follows: on salaries up to $160 a month, 20 per cent.; from $161 to $250, 15 per cent.; and of $251 and upwards, 10 per cent. The note points out that the National Labour Department has fixed $175 as the minimum monthly wage, and states that, out of a total of 82,368 railway employees over 60 per cent. are in receipt of salaries and wages much below this figure.

BRAZIL

Competitive Traffic

In his report for the year ended December 31, 1941, the General Manager of the Leopoldina Railway pointed out that, insofar as concerns that year, conditions governing the intensity or otherwise of competition by road and sea for traffic from the company's zone remained substantially unchanged from that of the previous year. Progress continued to be made with construction of the new main arterial highways—the Rio-Baia trunk highway *via* Porto Novo, Leopoldina, Muriaé, and Manhuassú; the strategical coastal highway from Niteroi, *via* Cabo Frio, to Macaé and Campos; and that running from Itapemirim to Vitoria parallel to the coast. There was still no indication, however, that long-distance goods traffic was likely to be diverted to any appreciable extent, although the considerable reduction in actual distance and journey time by bus and private car undeniably would tend to attract passenger traffic to those new highways.

Seaborne traffic between Rio de Janeiro and the coastal ports adjacent to centres of production on the line had tended to diminish still further, for reasons of higher operating costs and diversion of shipping to trade between other points, and was virtually restricted to the carriage of timber from points in Espirito Santo State remote from the company's zone of influence. The tonnage of traffic brought to the line by collection and delivery services of allied road agencies increased satisfactorily from 8,254 tons in 1940 to 11,664 tons in 1941. It was still apparent that the growth of demand for transportation was increasing parallel with the provision of new facilities, a tendency which was reassuring to all interests concerned.

FRANCE

Railway Staff

The staff of the Société Nationale des Chemins de Fer, excluding personnel belonging to the Alsace and Lorraine systems, which have been incorporated in Reichsbahn, numbered 403,080 at the end of 1941, or about 30,000 less than in early September of 1939, but some 10,000 more than the totals of the constituent companies at the end of 1935. The following table shows the distribution and strength of the staff since 1935; for purposes of comparison, the Alsace and Lorraine staff is not included :—

	Dec. 31, 1935	June 30, 1939	Dec. 31, 1941
	(Constituent companies)		
Central offices and regional managements	9,900	9,070	10,423
Executive and traffic offices	159,000	172,542	152,031
Locomotive and works departments	131,900	153,884	143,099
Construction and maintenance departments ...	92,900	96,976	97,527
Total	393,700	432,472	403,080

Working Hours

A Decree issued by the Minister of Communications, dated June 16, 1941, and based on the Law of October 3, 1940, fixed working hours for railway personnel at 2,408 a year. This Decree, however, was intended only to sanction the corresponding service regulations in force since August 1, 1940. Working hours at present are less than two per cent. longer than they were before 1937, when (allowing for a certain period of transition which began in June, 1936) the general rule was for eight working hours a day. At that time there were 298 working days a year (allowing for 52 Sundays and a fortnight's holidays), and the number of working hours a year thus totalled 2,384. From January 1, 1937, to September 1, 1939, the 40-hour week was in force. This was superseded, as a war measure, by the 60-hour week, which remained in force until August 1, 1940, when the yearly working-time of 2,408 hr. was introduced. Special regulations provide for the duration of working shifts; the clear working-time is fixed at 8 hr. 15 min. a day. These regulations affect train crews, locomotive crews, construction and maintenance staff, and also personnel of the stationery and stores services.

Social Services

Free medical assistance is provided for the staff of the S.N.C.F.; about 2,500 doctors are on the company's panels. Nurses and social service assistants are charged with the task of visiting families of railwaymen in an advisory capacity. Children whose health is failing, and whose families are in a precarious economic position, are sent to the company's holiday colonies.

In four regions special shops have been established for the sale of consumable goods and food at special prices to railway personnel; in the fifth region these shops are run by mutual co-operative societies. Special kitchens and canteens have been established to provide railway staff with cheap meal facilities; the canteens, however, work under particularly difficult conditions at the present time due to the scarcity of food supplies at reasonable prices.

Pensions and Social Welfare Funds

The pensions fund is charged with the payment of ordinary, old age, and invalidity pensions, as well as of pensions to widows and orphans of railwaymen killed as the result of accidents on duty or who have been members of the pensions fund for at least 15 years. Receipts of the pensions fund for 1941 consisted of contributions from the railwaymen totalling fr. 316,000,000, of interest from capital investments of the fund, totalling fr. 716,000,000, and of contributions from the S.N.C.F., aggregating fr. 1,367,000,000.

The social welfare fund provides for the greater part of the cost of medical treatment for both the railway personnel and members of their families. The income of the fund consists of contributions from the staff and of allocations from the S.N.C.F.

The S.N.C.F. administers or supports various schools for the children of its staff, as well as health centres and sanatoria, libraries, and sporting associations formed by the railway personnel.

SWITZERLAND

The Jungfrau Railway

This well-known mountain line, the highest in Europe, celebrated on August 1 the 30th anniversary of the opening of its final section. It has been opened in stages as follows: Scheidegg-Eigergletscher, September 20, 1898; Eigergletscher-Rotstock, August 2, 1899; Rotstock-Eigerwand, June 18, 1903; Eigerwand-Eismeer, July 25, 1905; Eismeer-Jungfraujoch, August 1, 1912.

The total length of the route is 9·2 km., of which 7·1 km. are in tunnel, bored through the solid rock of the Eiger and Mönch. Rotstock station no longer is used, but trains stop at Eigerwand and Eismeer stations (both crossing-places) long enough for passengers to alight and appreciate the views afforded from large openings in the mountain side, connected with these underground stations by short tunnels.

At Jungfraujoch, tunnels of varying lengths connect the station with the Berghaus Hotel (from which the Joch plateau and "ice palace," providing all-the-year-round skating, are reached), and with the Sphinx lift and observatory, and other points of interest, from which remarkable views extend both northwards and over the Aletsch Glacier and the Valais Alps to the south. In September, a series of well-patronised excursions were run from Berne at a fare of fr. 27; the normal return fare from Scheidegg to Jungfraujoch alone is fr. 40.

As far as Eismeer, and for some distance at the Jungfraujoch end, the line is worked on the Strub rack system. The length so operated is 6·5 km.; the intervening stretch is adhesion-worked. Three-phase current is used, at 650 V., with a frequency of 40 periods. Trains consist of a locomotive (at the lower end, pushing or retaining) and two 4-wheel coaches, and have a speed of 10 km.p.h. on the rack, and of 15 km.p.h. on the adhesion section. No through running is possible with other lines, as the Wengernalp Railway is of 0·81 m., and the Jungfrau Railway of 1 m. gauge.

Preparing for Air Raids in South Africa

A brief account of the Civilian Protective Services organised by the South African Railways & Harbours Administration

THE current instruction in the Union of South Africa is that, in the event of an air raid or a shelling attack from the sea, all transport services will be brought to a standstill, and, if this occurs at night time, all lights will be extinguished. Passengers will be allowed to remain in the railway carriages or to seek shelter near by, and appropriate instructions have been issued to train staffs in this respect. Warning devices and sirens are provided at all vital points.

Precautions have been taken to safeguard the railway staff who may be on duty during an emergency by providing air raid shelters and trenches, adequate medical facilities to deal with casualties, and modern fire-fighting equipment. Although the railways administration cannot accept responsibility for the protection of civilians who may seek shelter on railway premises, every assistance will nevertheless be given to those in distress.

The administration has also organised Civilian Protective Services (Railways & Harbours) which are conducted on similar lines to the Municipal Services, but the principal aims of the Railways & Harbours C.P.S. are to protect the lives of railway personnel who may be on duty, to safeguard railway property, and to ensure that the transport services of the country will be disorganised as little as possible. This protective service undertaken by the railways administration has necessitated a considerable organisation and widespread control, and to ensure maximum efficiency the larger centres have been subdivided into various areas, districts, sectors, and so forth, with System Managers as the Chief Area Controllers, each with an appointed deputy as Deputy Area Controller. In addition, various separate and specialised controls are co-ordinated under this central control.

In the larger centres different railway areas come under separate area controllers. For example, at a port, in addition to Workshops and Railway Area Controllers, there is a Harbour Area Controller. The other categories, each under a separate controller, are Rescue & Demolitions, Track Repairs, First Aid, and Auxiliary Fire Services. The controller in each case is a responsible officer with specialised knowledge of the type of work for which he has been appointed, and, as far as possible, his assistants are also specialists in the particular branch of C.P.S. work to which they are delegated.

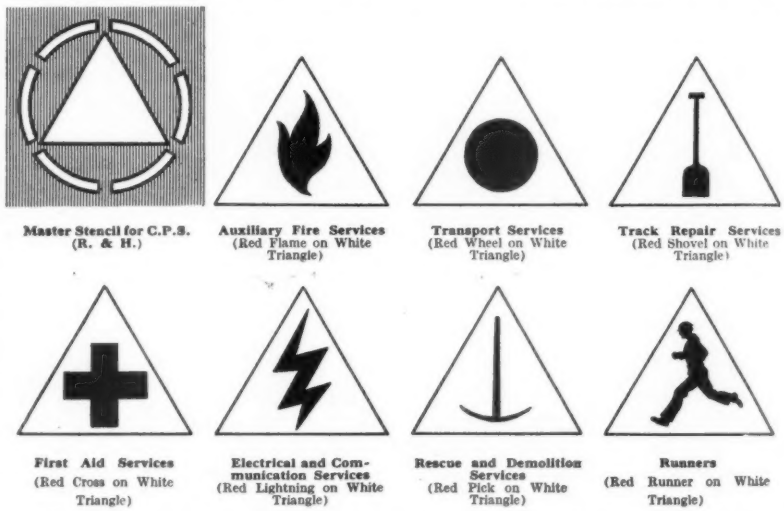
The Rescue & Demolitions Controller is a senior officer whose civilian duties fit him for this work, and the members of the squads, who will be available for the rescue of any personnel trapped in damaged buildings, etc., are recruited from break-down crews. Similarly, the Track Repair Controller is an officer experienced in track maintenance work, and the break-down gangs and track repair squads consist of men who in civilian life are engaged in this work, and they will be on call as is the normal practice.

The First Aid Controller and Deputy Controller in the larger centres are usually medical officers, and members of the staff who have received special training in first aid form stretcher bearer parties, and man first aid posts and casualty clearing stations.

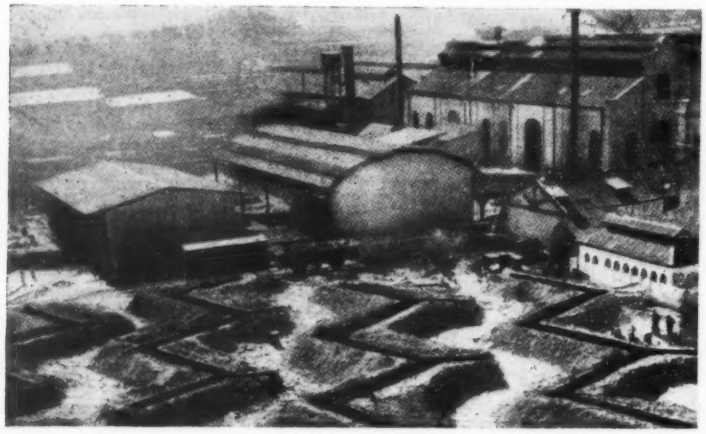
Auxiliary Fire Services are made up of area wardens, fire sector wardens, fire patrols, and fire squads. Large numbers of fire patrols are distributed throughout every area and will report any outbreak of fire, deal with incendiary bombs, and, as far as possible, any fires caused thereby. Fire Squads stationed at strategic points are available to deal with fires beyond the control of the fire patrols, and have trailer fire pumps and other equipment enabling them to function as fire brigades.

For administrative and co-ordinating purposes, a Headquarters Controller, C.P.S. (R. & H.), has been appointed on the staff of the General Manager at the railway headquarters.

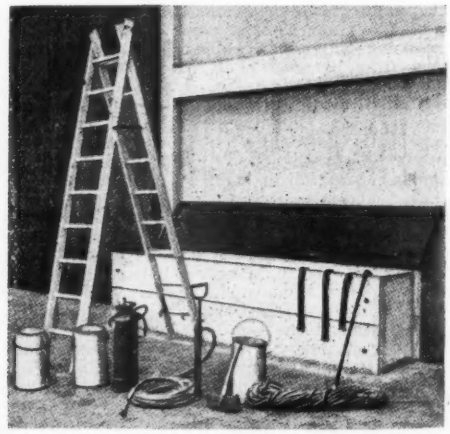
All members of the railways staff who attest for service with the C.P.S. (R. & H.), are trained at the expense of the administration in the most modern methods of self-defence against enemy attack, and they receive compensation for casualties on the same basis as men in the Union Defence



Distinctive insignia stencilled on the helmets of the Civilian Protective Services (Railways & Harbours)



Surface trenches provided for railway staff at Durban



C.P.S. fire patrol equipment locker

Forces. In addition to the fact that all attested members are indemnified against loss of life or limb, no pecuniary loss is suffered while they are undertaking their training. Payment is made for all overtime and piecework which may be lost as the result of an employee being engaged in C.P.S training. Members of the staff who allow their cars to be used for C.P.S. purposes will receive adequate compensation for any damage done to their cars while on duty.

All members of the C.P.S. (R. & H.) are provided with uniforms and caps for identification—brown overalls in the case of Europeans and blue in the case of non-Europeans. Brown Balmoral caps are issued to European men, brown service caps to European women, and blue garage caps to non-Europeans. Steel helmets and badges are also issued, and the distinctive insignia stencilled on the helmets are illustrated.

Before the establishment of the Railways & Harbours C.P.S. many railwaymen had enrolled as Municipal C.P.S. workers in various parts of South Africa, but because it is felt that railwaymen, by the nature of their civilian employment, are better fitted to become members of the Railways & Harbours C.P.S. than of Municipal or outside protective services, steps are being taken to secure the release of railwaymen from Municipal organisations, N.V.B., Civic Guards, etc.

In many areas members of the staff are showing great enthusiasm for C.P.S. work, and women as well as men have been trained. The women are of great assistance in first aid work, in which many of them have had long experience, and they have also responded well to instruction in fire-fighting methods, as indeed has proved the case in other parts of the world, notably Great Britain and Russia. The South African Railways & Harbours Administration has under consideration the provision of mobile canteens to supply snacks for C.P.S. workers who might be on duty for long spells during an air raid, and if this is put into effect, women will be recruited for canteen work.

Some of the fire-fighting appliances have been assembled in the workshop of the South African Railways & Harbours Administration. An important unit of this fire-fighting equipment is a moderate-sized pump driven by a petrol engine and mounted on a 2-wheel trailer chassis with the necessary hoses, etc. Each pump carries twelve 100-ft. lengths of hose with fittings to permit of up to four nozzles being used. As such fire pump trailers can be obtained from overseas only on the basis of long-distant delivery dates, it was decided that a unit should be designed and built as far as possible in the railway workshops. After a series of tests with industrial pumps, a suitable pump was designed, and its manufacture has been placed with a private South African firm specialising in centrifugal pumps.

Fire arm-shields, made of $\frac{7}{8}$ in. board fronted with sheet iron and provided with handles, have also been manufactured in the railway workshops.

High-Tensile Steels for Lightweight Construction

In America weight reduction without loss of strength has been achieved by the use of these steels

*By Albert F. Stuebing**

UNTIL recent years alloying elements in steels were not considered a practical means of improving physical properties, except in materials to be heat treated. It is therefore significant that numerous high strength steels containing relatively low percentages of the most familiar alloying elements have been extensively applied in many industries without heat treatment. These are low-cost, tonnage steels made by the open-hearth process. They possess high physical properties when they leave the rolling mills and so they fulfil their purpose without any heat treatment. Some of these steels have a corrosion resistance well above the average. These "high-tensile" steels or "high-yield-point" steels have been so important a factor in the recent development of light-weight construction that they are frequently referred to, even by prominent engineers, as "light-weight" steels, despite the knowledge that their specific gravity is unchanged.

Here and there the use of these steels in industry has been regarded with suspicion as an attempt to achieve weight reduction at the cost of strength or durability. This is due to a misconception. Designers have found that, by the use of high-tensile steel and its proper disposition, equipment and structures can be made substantially lighter and still provide equal or greater strength to withstand forces and impacts arising from service. Gratifying economies in operation are achieved with lighter equipment without any increase in maintenance or depreciation and often with no increase in first cost.

The basic features of the new light-weight development are best illustrated by the transportation industry.

High-speed trains afford excellent examples of weight saving by means of these steels. Coaches in the Daylight trains of the Southern Pacific, built of the high-tensile steel U.S.S. Cor-Ten, weigh 30 per cent. less than the equipment they replaced, and this has been the principal factor in shortening the time between Los Angeles and San Francisco from 11 hr. to $9\frac{3}{4}$ hr. Coaches for the Hiawatha of the Chicago, Milwaukee, St. Paul & Pacific Railroad, made of the same steel, having high tensile and atmospheric corrosion resisting properties, replaced light-weight welded coaches of carbon steel, with yet a further reduction of 17 per cent. in weight. A train of nine coaches is now hauled by the same locomotive at the same speed and with the same amount of fuel as seven of the older ones. Weight was reduced principally in the body structure; for instance, in the "coaches," the body was reduced 22·3 per cent., that is from 72,200 lb. to 56,100 lb.

Another illustration is the streamlining of the Twentieth Century and the Broadway Limited, with mile-a-minute schedules between Chicago and New York. Altogether 114 new coaches were required, in which U.S.S. Cor-Ten was extensively used. Stainless steel, itself a high-tensile steel, was used for decorative trim and kitchen equipment, and for some of the dining-car bodies. Approximately one-third the weight of a conventional train of Pullman cars is saved, and a fuel saving of 10 to 15 per cent. is anticipated, despite the increased speed.

Such developments have not been limited to high-speed equipment. The New York, New Haven & Hartford Railroad alone has some 205 coaches for ordinary service made of U.S.S. Cor-Ten and U.S.S. Man-Ten; in them about 36,000 lb. or 26 per cent. of the weight is saved by high-tensile steel. Thickness is reduced in centre sills, side sheets, side posts, belt rails, and so forth; some parts are only half as thick as would be necessary in carbon steel. Altogether, well over 1,600 rail units made of high strength steel are now in passenger service in America.

Railways in other countries favour steel underframes and wood superstructures. By using these new steels, the safety of all-steel construction is secured without exceeding the weight of composite equipment, as, for instance, in the trains built by the Victorian Government Railways.

From an economic standpoint, the freight wagon is much more important, because there are about fifty of them for every passenger coach on American railways. The President of the Chicago, Burlington & Quincy Railroad, Mr. Ralph Budd, said that the handling of freight wagons alone, not counting their contents, produces about 500 billion ton-miles of transportation in a year. It would be entirely practicable, if the money were available, to reduce the weight of freight cars by one-fourth, which would mean a reduction of 125 billion ton-miles in the total movement of wagons alone, in a year. At a very low reckoning, this would save about $125,000,000 a year.

An all-welded box wagon, built of U.S.S. Cor-Ten illustrates the statements made by Mr. Budd. This wagon is five tons lighter than the Association of American Railroads' standard wagon, which is itself an efficient, highly-developed design. The Engineering Research Division of the Association of American Railroads conducted collision-impact tests of wagons of these two types loaded to full capacity, so that each weighed 169,000 lb. Stresses at many locations in both were determined by strain gauges. This new wagon, despite its lighter weight, and five tons additional load, withstood higher speeds of impact than the standard wagon without showing any distortion of the members.

* Mr. A. F. Stuebing is an engineer on the staff of a U.S. Steel Corporation subsidiary.

SOUTH AMERICAN POST-WAR PROSPECTS.—In the course of his statement circulated recently to stockholders of the Bank of London & South America Limited, the Chairman, Lord Wardington, said that, because of their difficulties in obtaining goods from overseas, South American countries had developed manufacturing industries to an extent which was bounded only by problems of securing necessary materials, equipment, and technical assistance. All these industries might not survive after the war, but, if even a certain number of articles formerly imported should continue to be manufactured locally, inquiries might be made abroad for new equipment, the replacement of outworn plant, and spare parts. Opportunities existed also for post-war trade recovery in the accumulating demands for specialised manufactures which the highly-industrialised countries still were able better to supply. British trading interests should endeavour to maintain the intimate personal connections which always had been a happy tradition in Anglo-South American trade.

International Railway Associations—III

Some notes on the work and scope of the various associations concerned with international traffic, principally on the European Continent

IN this, the concluding instalment of our series of articles on international railway associations, we have included some bodies of which the membership is restricted to particular nationals or groups of countries. They are therefore not strictly comparable with those other associations that are not so restricted as to membership. Nevertheless, their activities are often on parallel lines, and in some cases (notably in the case of the Verein) the influence exercised is extensive. In the final paragraph we have made reference to the large number of international tariff agreements concluded between the railways of the various European countries, which form kinds of international associations. Space precludes our giving details of the many similar arrangements for facilitating international traffic, but it is hoped that this series of articles will prove useful in outlining the general structure for the regulation of international railway traffic as it existed at the outbreak of the present war.

International Railway Congress Association

The Association internationale du Congrès des Chemins de Fer has as its objects the organisation of congresses at more or less regular intervals, and the publication of bulletins, dealing with every phase of railway management, operation, engineering, finance, and law, and any other subjects of special interest in the field of rail transport. Matters discussed at the congresses may yield recommendations, which are left to Governments and railway administration for consideration, or adoption. No conventions or binding agreements of any sort are the result of these congresses.

The association is not European, but world wide, though its principal activities have always been directed from Europe. The association was established in 1885, on the initiative of the Belgian Government, on the occasion of the Belgian railway jubilee. Government and railway delegates took part, and the name adopted for the association was then Congrès international des Chemins de Fer. At the second congress, held at Milan two years later, the association's activities were further regulated, and congresses were convened at regular intervals up to the war of 1914; the full list is as follows:—

1. Brussels, 1885
2. Milan, 1887
3. Paris, 1889
4. Petersburg (Leningrad), 1892
5. London, 1895
6. Paris, 1900
7. Washington, 1905
8. Berne, 1910

Activities ceased during the first world war; after the war the association was re-formed under its present name. Congresses were held in the following order:—

9. Rome, 1922
10. London, 1925,
11. Madrid, 1930,
12. Cairo, 1933
13. Paris, 1937

Delegates from most of the world's railway countries, Governments as well as railway administrations, participated from now on in the association. The only notable exceptions were the U.S.A. and the U.S.S.R. Membership of the association is limited to countries and administrations operating at least 100 km. of railway route, using mechanical traction, and registering traffic receipts of at least 2 million gold francs (approximately £400,000 per annum).

The association has its own secretariat, which has always been at Brussels, and a permanent office staff is maintained there. A standing committee is in charge of the administration. It is composed of the president of the last congress, and members from many countries.

The association issues bulletins, in the English, French, and German languages, entitled the *Monthly Bulletin of the International Railway Congress Association*.

League of Nations, Communication Section

Governments which are members of the League of Nations have formed a number of international bodies to regulate international affairs, among which there are for railway transport the League's General Conferences on Freedom of Transit, of which four have been held, and a permanent Advisory Committee for Communications & Transit. These associations are based on certain articles of the Peace Treaty of Versailles, and of the League Covenant. The Articles 336, 338, 342, 376, 379, of the former deal with international rules for transit on railways, ports, and inland waterways. By Art. 23e of the Covenant of the League the members pledge themselves to the principle of freedom of communications, transit, and commerce. The regulation of these matters was to be the task of general conferences.

The first conference was held at Barcelona in 1921. The principal work achieved by this conference was (i) the creation of the advisory committee, consisting of 18 experts selected from the member States; (ii) the drafting of a convention on the freedom on transit, subsequently adopted as the League's "Convention and Statute on the Freedom of Transit"; (iii) a recommendation to draft within two years a convention on international railway transport.

The second conference, held at Geneva in 1923, approved the draft convention which had been devised by the advisory committee. Adopted under the name "Convention and Statute on the International Regime of Railways," it was ratified by the European States, except Russia. Later conferences were held at Geneva in 1927 and 1931, but they took no material decisions in which railways were concerned.

The permanent secretariat of these associations is the Communications & Transit Section at the League's headquarters in Geneva. It publishes bulletins and reports on all affairs dealt with in the conferences, by the advisory committee, and by the League Assembly concerned with transport and communications.

International Railways Union

The Union internationale des Chemins de Fer, known as the U.I.C., was formed on the initiative of the International Economic Conference of Geneva held in May, 1922, for the purpose of achieving international traffic improvements by measures of unification of construction, operation, and equipment, to standards "equal to or better than those of pre-war (*i.e.* pre-1914) days." A special conference was held in Paris in October of the same year, at which the union was formed; it was officially inaugurated from December 1, 1922.

Members are European railway administrations operating at least 1,000 km. of standard or broad gauge lines, and railway administrations in adjoining territories which participate in through traffic to Europe. Other railways and companies directly interested in international traffic are admitted as associates. Practically all European railways of the prescribed size are members, as are also the railways in North Africa, the Chinese, and the Japanese railways. Among the associates is the Wagons-Lits Company.

The union's agreements are not binding on the members, but take the form of recommendations only. Several have, however, been accepted and adopted by members. A general assembly meets every three years, and on it all members are represented. They have voting rights in proportion to their route mileage in operation. In more or less permanent session is an executive council of 20 members, under a French president, and three vice-presidents, British, German, and Italian, all elected for 6 years. Under this council work five permanent committees, members of which are also elected for periods of 6 years, respectively for passenger traffic; goods traffic; accounts, exchange & clearing; rolling stock exchange; and engineering & technical.

Special committees are appointed for important subjects; one such committee was functioning on the subject of automatic couplings. Inside the framework of the union, railway members are allowed to form regional groups for common regulation of problems affecting the region only. Among the achievements of the union are agreements on uniformity in the publication of passenger tariffs, the nomenclature of goods, conditions for luggage and for parcels conveyance, standards of drawgear, and of handbrakes; also the establishment of a compensation office, the Bureau Central de Compensation (B.C.C.), for clearing debts and other payments between members. This office is administered on behalf of the union by the Belgian National Railways at the Brussels head offices. The union's expenses are covered by contributions levied from the members in proportion to their voting power, which in turn is proportionate to the sizes of the systems they operate.

The union publishes a monthly journal, the *Journal de l'Union internationale des Chemins de Fer*, in the French and German languages; and yearly statistics in French of route and track mileages, rolling stock, traffic, receipts, expenditures, finance, staff, and accidents, of the systems of members, under the title *Statistique internationale des Chemins de*

Fer. The union's headquarters are in Paris.

Union of Central European Railway Administrations

The Verein Mitteleuropäischer Eisenbahn Verwaltungen, though strictly not a European but a regional association, can nevertheless be considered better with the general European associations, as it has had an enormous influence on the shape and creation of the other unions, and has comprised an important part of the continental railway system as a whole. As with all German institutions, the Verein has been pressed into the Nazi political system, and its pre-war activities among the smaller members considerably facilitated the Nazi political and military war machine. In wartime it is being used for the same purpose.

The association originated as the Verein Preussischer Eisenbahn Verwaltungen in **1846**, and is therefore the oldest European railway association. In **1847** other railway companies in the German *Bund* joined, and the name was changed to the Verein Deutscher Eisenbahn Verwaltungen, which was retained until **1932**. The wars of **1866** and **1870** leading to the creation of the German Reich, the expulsion of Austria, and annexations of other territories, made no difference in the composition of the Verein. The German and the Austro-Hungarian railways were subsequently joined by the Dutch railway companies and the Roumanian railways. In **1914** these were the only members. After the world war, the Netherlands Railways and the Luxembourg Prince Henri Railway remained as the only non-German members. In **1927** the Reichsbahn, the Austrian, Hungarian, and Netherlands State Railways, the Prince Henri Railway, all German private companies, and a number of Austrian and Hungarian private railways were members. In **1929** the Scandinavian railways —the State railway systems of Sweden, Norway, and Denmark—joined as associates. Having no voting rights, they reserved to themselves the right of non-adherence to the Verein's regulations, existing and future. The Swiss Federal Railways entered on the same conditions. In **1932** the present title of the association was adopted.

The activities cover all fields of railway operation and engineering, management, operation, construction, maintenance, commerce, finance, law, and statistics. The principal aim of the association has been to secure standardisation in all these fields, and, by reason of its preponderant size, the Reichsbahn is in a position to influence the methods of the other members, in many cases to their disadvantage, as methods which may be ideal for a large system such as the Reichsbahn are often a burden on small systems. The administration of the Verein is entrusted to one of its members by election held every **6** years; the Reichsbahn direktion Berlin is always elected. A general meeting is held every **3** years. Members have one vote for every **1,000** km. of line in operation; those administrations operating more than **2,000** km. have **10** extra votes; the smaller companies are grouped and have one vote for **1,000** km. Decisions taken in the general meeting are binding on the members but not on the associates, namely, the Scandinavian and Swiss railways. Six permanent committees, elected for **6** years and composed mainly of Reichsbahn direktionen delegates, deal with (i) management, (ii) passenger traffic, (iii) goods traffic, (iv) wagon exchange, (v) engineering, and (vi) price and costs; these committees meet usually twice a year. The rules and regulations of the Verein have in many cases formed the basis for the associations mentioned earlier. The Verein's members are also included in the memberships of these associations, but there are many points upon which the Verein, within its own territory, has established additional rules in elaboration of the general regulations of the other unions. With regard to matters dealt with by the Berne Conventions, C.I.M. and C.I.V., up to **1928** the Verein maintained its own regulations; thereafter the decisions of the Berne Conventions, which were ratified by the German Government, have been adhered to.

One of the Verein's chief publications is its *Technische Vereinbarungen*, standards for construction and maintenance. Two periodicals are published by the Verein, namely, the *Zeitung des Vereins Mitteleuropäischer Eisenbahn Verwaltungen* (weekly), and the *Organ für die Fortschritte des Eisenbahnwesens* (twice monthly).

Eastern European Change-of-Gauge Associations

Two associations have been in existence for the management and operation of the special equipment for through working of special goods wagons on the standard and the broad gauges in Eastern Europe. The first is the German-Polish-U.S.S.R. association, the second the German - Lithuanian - Latvian - Estonian-U.S.S.R. association. These are successors to the pre-**1914** German-Russian association which had the same object. The administration of both unions was under the care of the Reichsbahn central wagon department (the Hauptwagenamt) in Berlin. The railways of the two associations possessed several thousands of convertible wagons. The first-named association had two conversion plants, on the Polish-Russian frontier, one at Niegoreloje, the Russian frontier station on the Warsaw - Minsk - Moscow line, and the other at Zdolbunowo, the Polish frontier station on the Warsaw – Kiev line. The second-named association had three such plants, one at Riga, one at Jelgava, and one at Daugavpils (Dvinsk), three junctions inside Latvia where standard and broad gauge met.

East European Group of the International Railways Union

Inside the International Railways Union and bound by the Statute of the union, a group was formed by the State Railways administrations in Poland, Czechoslovakia, Roumania, Jugoslavia, and Bulgaria, for the regulation of problems which concern only these railways. This was the only group formed in accordance with the relevant provision of the Statute of the International Railways Union.

Northern Railways Officials Association

The Nordiska Järnvägsmannasällskapet is strictly not an association of railway administrations, but a union of officials of the Swedish, Norwegian, Danish, and Finnish State Railways. The association, however, has achieved the purpose of common policies in many directions among the railway administrations of the Scandinavian countries, policies which have in many cases a character of their own and differ from those of the rest of the European continent. For example, the common loading gauge of these northern systems is considerably larger than that of the European railways generally. Again, a common policy is adopted with regard to membership of other railway associations, such as the Union of Central European Railway Administrations (the Verein).

The association is old-established, founded as far back as **1869**. Since the middle 'seventies it has been in full and active operation in the four northern countries, and ever since it has issued an official journal, first called the *Järnbaneblad* ("Railway Paper"), and later renamed the *Nordisk Järnbanetidskrift* ("Northern Railway Magazine"), under which title it is still published. The further activities of the association consist in holding congress meetings regularly in the four countries in turn. They cover the whole field of railway management, operation, and construction, in its particular Scandinavian aspects. No congresses have been held during the present war. The **1940** congress, scheduled to take place in Copenhagen, was cancelled as German aggression had then extended to two of the associated countries.

International Rail Congress

In a category of its own comes the International Rail Congress. It is a purely technical association of railway engineering departments and metallurgists, dealing with one branch of railway equipment—the rail —the basic part of the permanent way. The association was founded in **1929** on the initiative of the engineering department of the Swiss Federal Railways. There is no fixed list of members ; triennial congresses have been held, attended by experts from European countries and the U.S.A., who are interested in the subject, and some **350** experts assembled in **1938**. Papers on all technical aspects of the rail are discussed at the congresses, of which so far four have been held. The first was in **1929** at Zürich, the second in **1932** also at Zürich, the third in **1935** at Budapest, and the fourth in **1938** at Düsseldorf. The last was the only one at which there was any British representation. Other countries concerned were Germany and Austria, France, Hungary, Italy, Roumania, Switzerland, and the U.S.A. A fifth was scheduled for **1942**, to take place in Rome, but the war has prevented its being held.

International Tariff Associations

A kind of association may be found in the large number of international tariff agreements concluded between the railways of the various European countries, some of which are known under the name "Verband." Actually they are not unions with their own administration, bureau, or secretariat, but simply agreements which are embodied in international books of rates and fares for through traffic, recording the shares accruing to the various administrations, and certain conditions of transit. An example of the many such *verbände* is the Deutsch-Swedish-Norwegischen Tarif Verband (German-Sweden-Norway). Actually it does not differ from a through traffic rates agreement like the British, Dutch, Belgian, and German railway tariff agreement for consignments from and to Great Britain, to and from, or in transit through the Continental systems involved.

[In view of the importance to post-war European reconstruction of reconsidering the functioning of many of these associations, this series of articles now concluded is being reprinted in brochure form, price 1s.—E. *R.G.*]

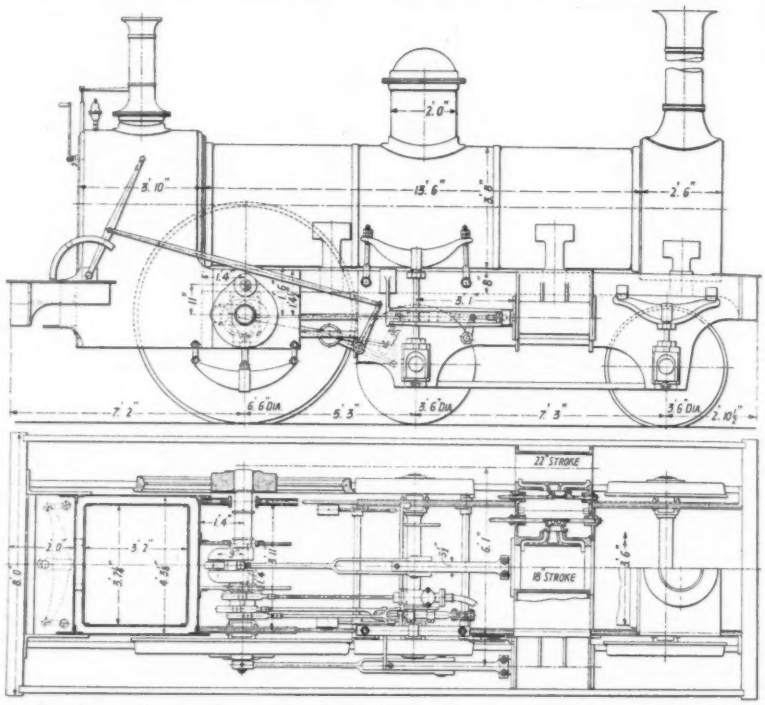
Old Railway Inventions Revived—II*

Three-cylinder locomotives and hollow axles

By W. M. Walton

THE 3-cylinder locomotive is a further example of an old idea which, after years of oblivion, has again come into favour, though in this case in a somewhat modified form. The advantages of 3-cylinder propulsion, namely, greater uniformity of torque and draught, and improved balancing, over the 2-cylinder type, are well known. A further advantage, over 4-cylinder machines, is the opportunity of providing long axlebox and big-end bearings, which often have to be restricted in size on engines with two inside cylinders. But the original 3-cylinder locomotive, built under Stephenson & Howe's patent of 1846, was designed with the object of removing the alternating upward thrust on the slide-bars on the two sides of the engine. To this end the locomotive, which was a rear-driver long-boiler machine, had 6 ft. 6 in. wheels, one inside cylinder 16¾ in. × 18 in., and two outside cylinders 10½ in. × 22 in. The outside cranks were at 0° to each other and 90° in advance of the inside crank. Two of these engines appear to have been built and ran on the Southern division of the L.N.W.R. with considerable success. In spite of the absence of balance weights, the peculiar crank arrangement avoided the "boxing" motion common in outside-cylinder engines of the day, which were usually unbalanced, but the fore and aft surging motion must have been very considerable.

In his book, "A Century of Locomotive Building," Mr. J. G. H. Warren introduced an excerpt from the *Newcastle Chronicle* dated May 7, 1847, which gave particulars of an extraordinary run with this engine on the previous day. A quotation read as follows:—"A special train consisting of five carriages was taken from London to Birmingham, 112 miles yesterday (Wednesday) morning in two hours and thirty minutes.† The actual time travelling did not exceed two hours, being an average speed of 56 miles per hour, the train being stopped four times on the journey to allow other trains to be clear of the line, besides stoppage at Wolverton to change engines. The engine which started from London, No. 157, is one of Mr. Stephenson's ordinary patent engines, and the latter part of its journey,

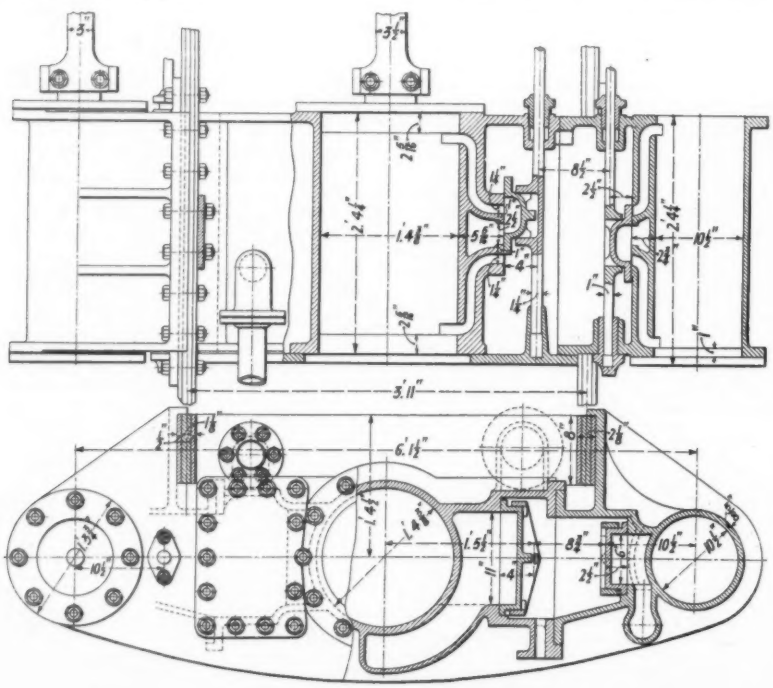


Stephenson's rear-driven 3-cylinder locomotive as originally built in 1846

21 miles, was performed in 21 minutes. "The maximum speed over upwards of a mile was 75 miles per hour. The engine from Wolverton to Birmingham was also a patent engine of Mr. Stephenson's having three cylinders, and it performed the first part of the journey, forty-one miles (until it was stopped by another train) in forty-two minutes. Maximum speed in this portion of the journey sixty-four miles per hour. We understand that Lord George Bentinck and several gentlemen going to the Chester Races were in the train. A side wind was blowing throughout the journey. Mr. McConnell (the locomotive superintendent of the London & North Western Railway Company) and Mr. Winter (the Superintendent of Mr. Stephenson's patent engines) were on the engine, and described the motion at the highest velocity as perfectly steady.

In 1853 at least one of these locomotives was rebuilt as a 2-2-2 with the middle wheels driving; the three cylinders were arranged under the smokebox. The cranks were as before. This engine subsequently ran for many years on the N.E.R., where it often worked the Royal trains, and had the reputation of riding very steadily. The outside valves were operated by a single link motion fitted on the right hand side and driving an intermediate cross shaft and rocking levers.

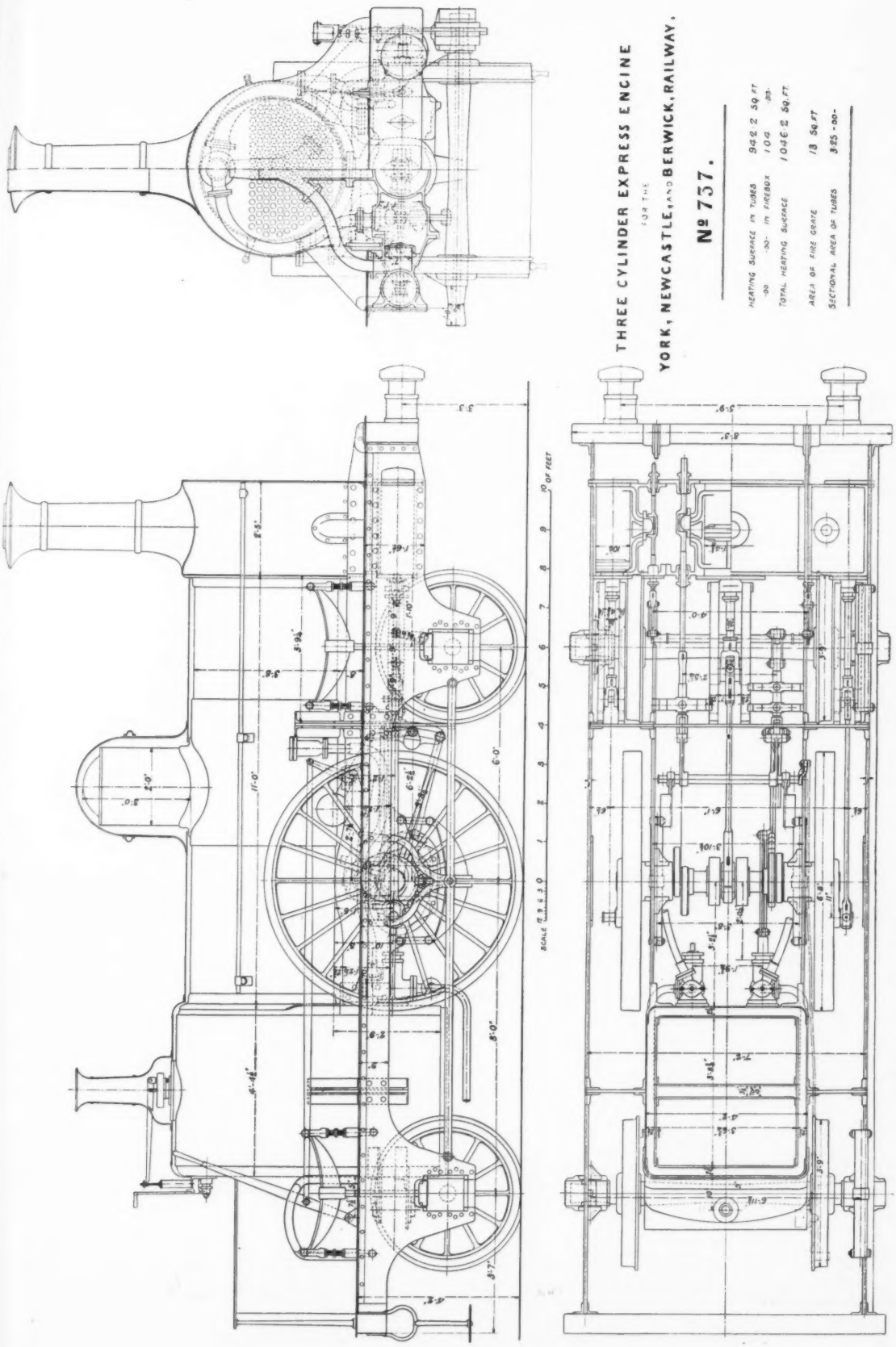
Although this was the first locomotive to be constructed with three cylinders, it



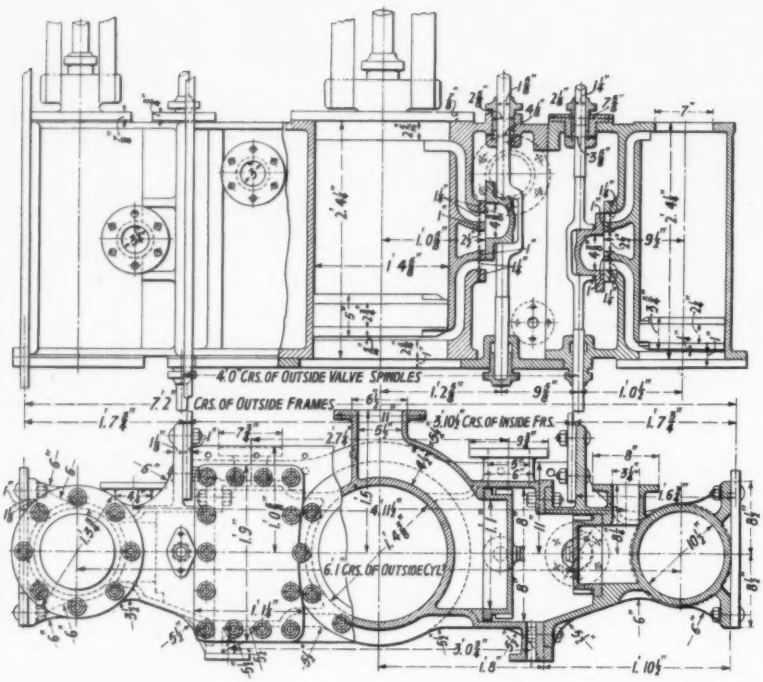
Arrangement of cylinders and steamchests in the original engine

* The first of these two articles appeared in THE RAILWAY GAZETTE of October 2

†Ahrons in his work "*The British Steam Locomotive*, 1825–1925," quotes this run or a similar one as having taken place on April 29, 1847



Stephenson's three-cylinder locomotive as rebuilt in 1853 with altered wheel disposition and new cylinders



Three-cylinder arrangement of the Stephenson locomotive as rebuilt in 1853

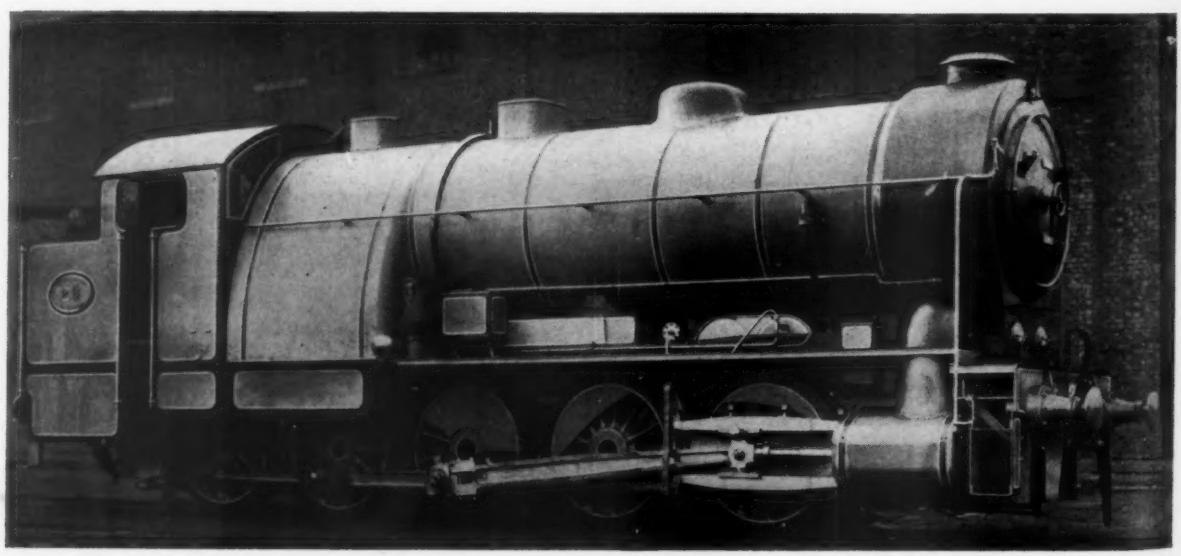
is notable that Isaac Dodds in 1839 patented a 3-cylinder design in which two outside cylinders fitted beside the firebox drove the leading wheels and a single cylinder beneath the smokebox drove the second pair of wheels. Apparently it never penetrated beyond the archives of the patent office. With the exception of two minor efforts the star of the 3-cylinder engine now suffered a complete eclipse until 1902, when Holden's Decapod appeared.

The two exceptions were a 0-6-0 built in 1868 under Stephenson & Howe's patent for the Blyth & Tyne Railway, and one of those curious pieces of machinery with which F. W. Webb used at intervals to astonish the engineering world. This latter was No. 1303 of the "Teutonic" class of 1889, and was described as a "continuous expansion engine." Nobody except Webb apparently succeeded in fathoming the principles on which it was constructed, but as the cylinders were given as 14 in., 14 in., and 20 in. × 24 in. stroke it is probable that it worked more or less on Stephenson & Howe's system. It was speedily converted to an ordinary "Teutonic" compound; "its doings as a 'continuous expansion locomotive'," as E. L. Ahrons remarked, "were shrouded under an impenetrable silence."

The first British 3-cylinder engine of the 120° type was Holden's Decapod of 1902, referred to above, of which the most curious feature was the triangular inside connecting rod embracing the leading axle, which was slightly cranked to provide ample clearance. The first 3-cylinder engines which might be said to be normal in all respects were Robinson's G.C.R. 0-8-4 tanks of 1907. The G.C.R. also led the way with the first 3-cylinder express engine, No. 1090, of 1909. This was an experimental conversion of a standard Atlantic with cylinders 15⅞ in. × 26 in. and Walschaert's valve gear. Subsequently it was reconverted to a 2-cylinder engine in 1922; the only mark distinguishing it from its fellows was the extra width of the running plate behind the slide bars, to accommodate the Walschaerts motion.

The introduction of the 3-cylinder type on the N.E.R. by Wilson Worsdell in 1908 and its development by Sir Vincent Raven is too well known to need recapitulation. It may be considered definitely to have proved its worth, having been adopted by three out of our four railways with signal success.

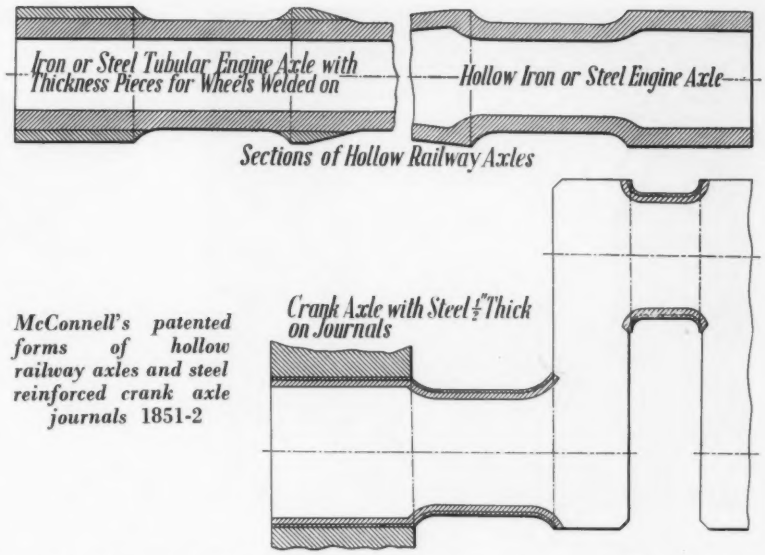
The superheater is another device which had an early beginning. In 1840 Hawthorns built for the Newcastle & North Shields Railway, a 0-4-2 locomotive with return flue boiler and a steam dryer or superheater consisting of a steam chamber in the upper part of the smokebox through which the steam passed on its way to the cylinders. The hot gases on their way to the chimney passed through a number of vertical tubes in the steam chamber. A similar device was employed by McConnell on the Southern division of the L.N.W.R. in his 2-2-2 express engines of 1852, but the tubes were horizontal and registered with the boiler tubes. This idea was again revived in a different form by Aspinall (1899) and others about that period, but the smokebox superheater could not compete with the modern smoke-tube pattern invented by Schmidt and introduced into this country by Hughes on the L. & Y.R. in 1906. Since that time the smokebox superheater has been completely displaced by the various forms of smoke-tube superheaters. J. E.



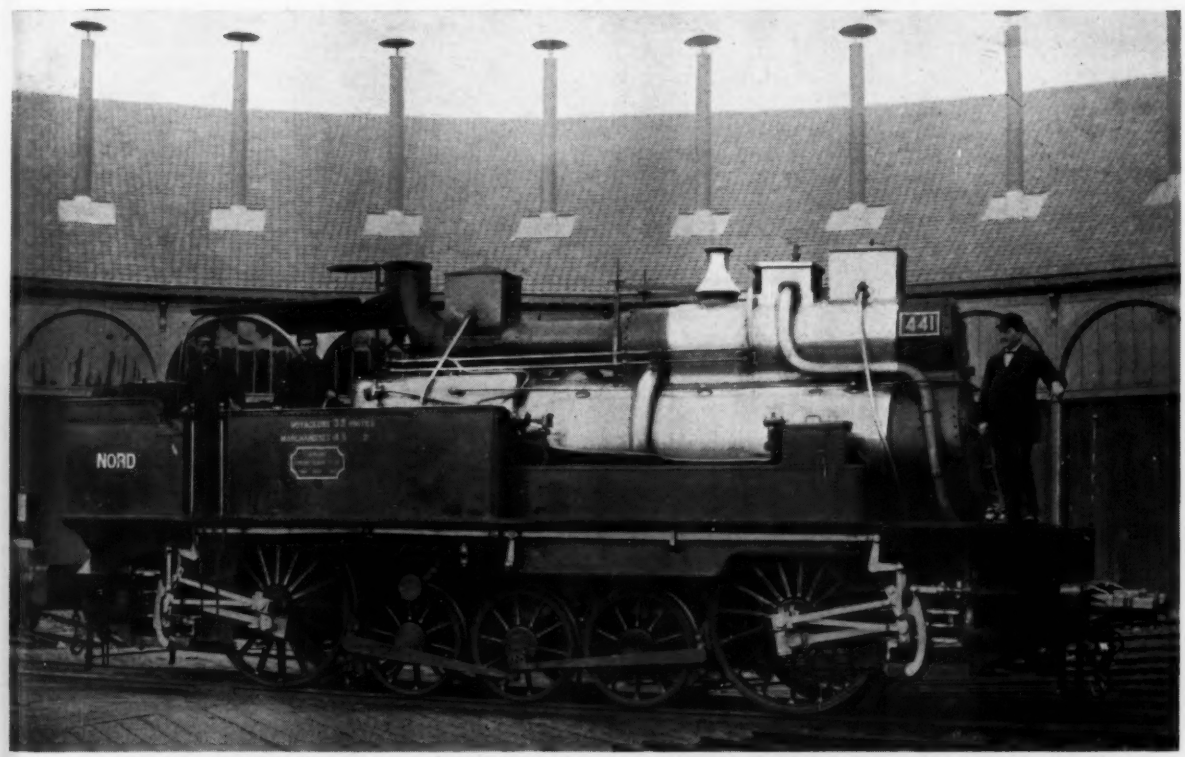
Holden's 3-cylinder Decapod tank engine of 1902 *for the Great Eastern Railway*

McConnell, who has already been mentioned in connection with superheaters and combustion chambers, was also years in advance of his contemporaries in many other respects. A further instance of his anticipation of future practice was in the use of hollow axles, now widely used on the L.M.S.R. The first of these appear to have been employed before 1845 on the Birmingham & Gloucester Railway; the L.N.W.R. 2-2-2s of 1852 referred to above also had hollow carrying axles. Ahrons (British Steam Locomotive, p. 96) states that these axles, in contradistinction to those of present-day design, which are bored from the solid, were built up of overlapping sectors welded together and reduced to diameter in the rolls: this would appear to be in accordance with J. C. York's patents of 1841-42. McConnell himself had patented in 1851 a process whereby the axles were formed of a single plate, bent and welded, and finished by hot rolling to shape: whether these axles were actually used or not is debatable. In similar locomotives of 1852 a further anticipation of modern practice was the use of piston rods welded direct to the heads, approximating to the one-piece forgings of the L.N.E.R. 4-6-2s. As in these latter, the rods were hollow.

The list of such devices could be extended almost indefinitely. Enclosed cabs, roller bearings, top-feeds, Belpaire fireboxes, and welded boilers all have an early as well as a modern history. In fact, it is probable that there is scarcely any modern improvement that has not in one form or another been anticipated by a previous inventor. The drawings appearing on pages 608 to 610 are from originals kindly placed at our disposal by Robert Stephenson & Hawthorns Limited, of Darlington.



McConnell's patented forms of hollow railway axles and steel reinforced crank axle journals 1851-2



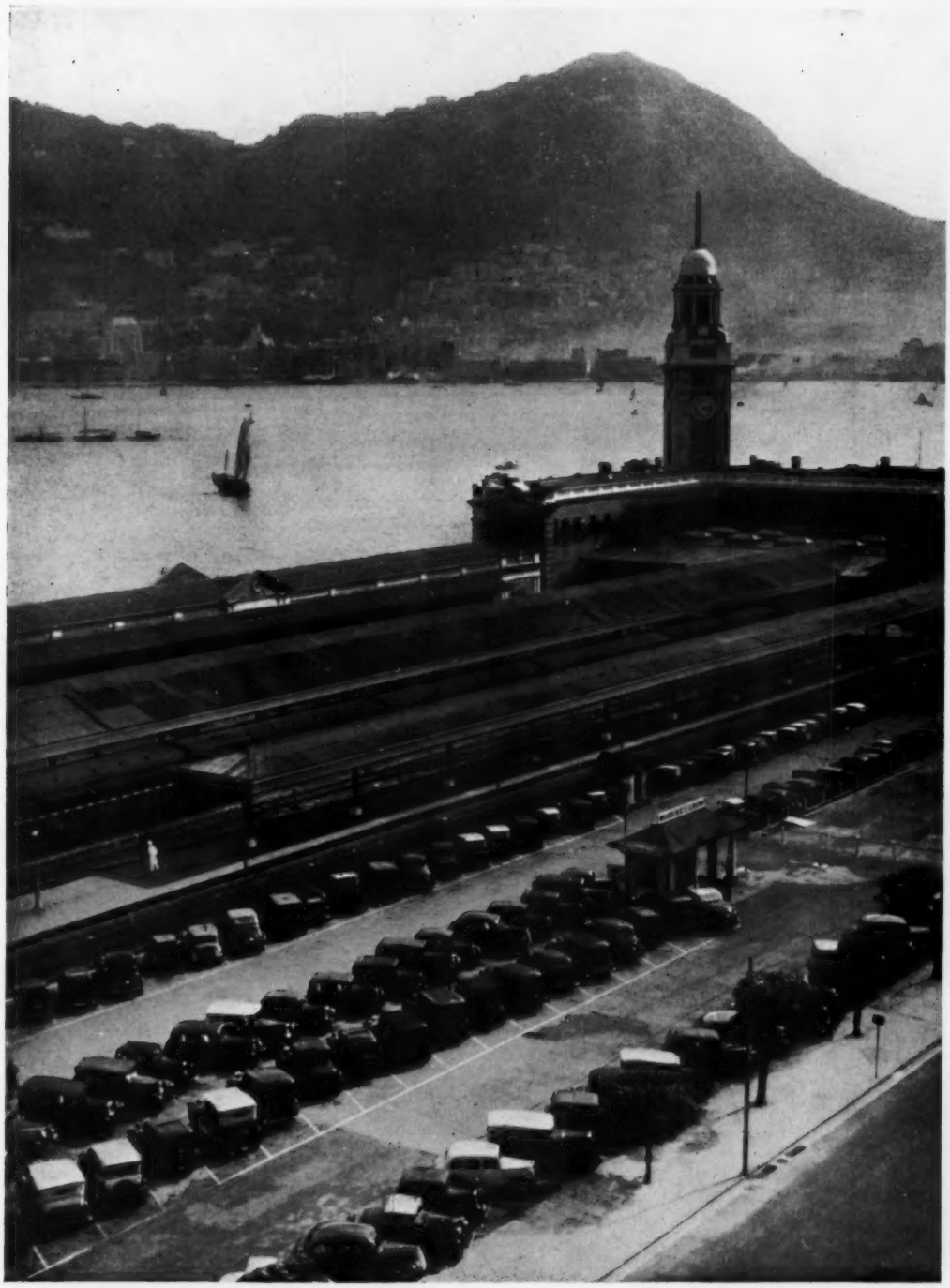
Four-cylinder "double-single" tank locomotive built by Ernest Gouin & Cie. of Paris in or about 1862 for the Northern Railway of France

Note the system of brake rigging for applying brake blocks to the driving and adjacent small wheels at each end of the engine, also rod running below the platform and used for reversing the two sets of valve motion on each side. The steam-collecting chamber or feedwater heater above the boiler and the extended horizontal chimney upturned at the cab end were part of special boiler and draughting features used in these and other locomotives of the same period in France. The wheel arrangement would probably best be described as 0-2-2-2-2-2-0; there were no coupled wheels. None of the dimensions nor any particulars respecting the service for which the engines were built is available. Lettering on the locomotive indicated that it was capable of handling passenger trains of 36 vehicles and freight trains of 48 vehicles

Locomotive Production in The War Effort

A selection of display panels which the Ministry of Supply is exhibiting in the canteens of locomotive works

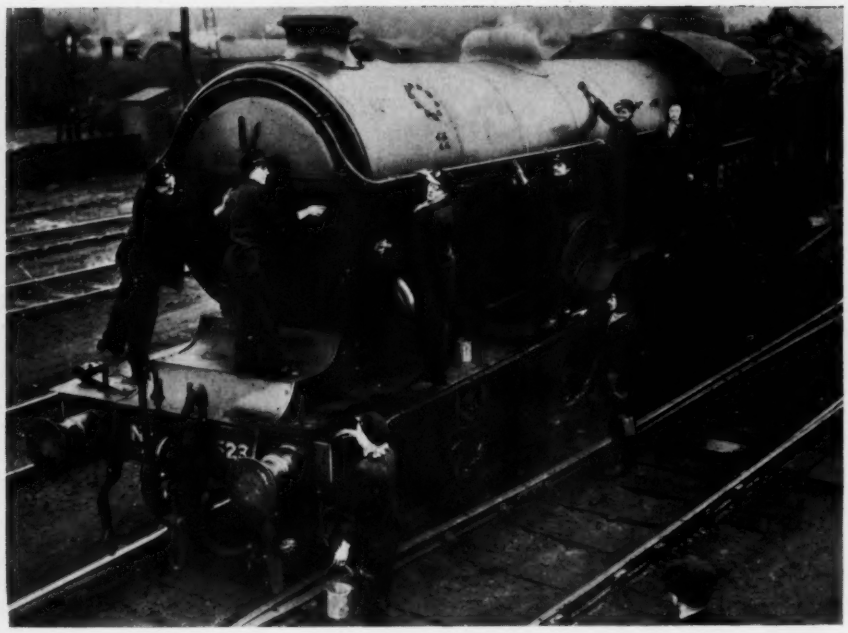
A Pictorial Retrospect



Hong Kong as seen from above the Kowloon waterfront. In the foreground is the Kowloon terminus of the Kowloon-Canton Railway (British Section). Hong Kong has been in Japanese hands since December 25, 1941

A corner of the "Observation dinette" which forms the rear portion of the second coach of the Denver & Rio Grande Western Railroad's new Prospector train introduced to provide a fast night service between Denver and Salt Lake City. Accommodation is provided for eight and is adjoined by a kitchen compartment

Stewardesses who have replaced stewards on the Blue Train of the South African Railways. This train, which makes the fastest run on the Johannesburg—Cape Town route, covers the 1,000 miles in 25¾ hr. The stewardesses have been chosen from numerous applicants; many of them have husbands on active service. They wear tailored white pea jackets with blue epaulettes, soft white shirts, and blue shorts



Women workers are replacing men called up for the Forces in a wide variety of jobs, and (above) we show a squad of engine cleaners busy on one of their L.N.E.R. charges. On the left are women billposters on the L.P.T.B.

Enormous quantities of materials are being dispatched to our Russian Allies, and above is an impressive view of a lengthy train of wagons carrying crates and leaving the London area for the East

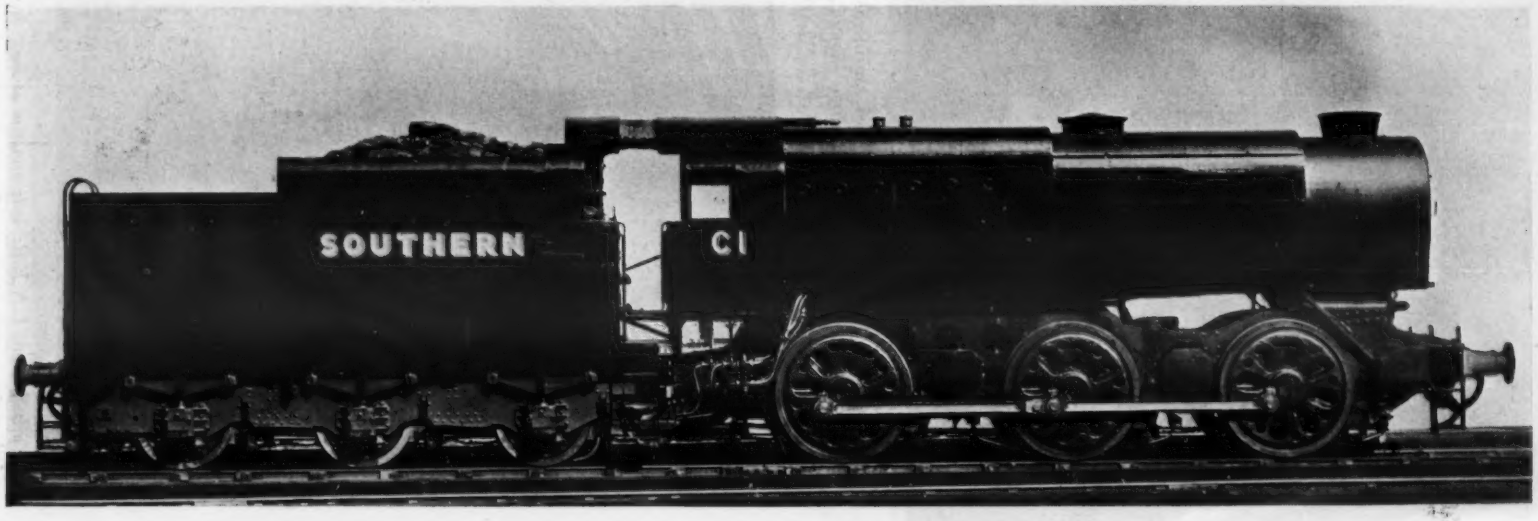
Damage to Paddington Station, G.W.R., by enemy action in the spring of 1941 *is depicted in the above illustration. A large bomb exploded close to the stationmaster's office. (The damage shown in some of the illustrations occurred earlier than the current year, but the photographs were not released until* 1942)

A bomb on the Bank Station of the L.P.T.B. caused a great cavity in the road on January 11, 1941. *Our illustration shows progress, a fortnight after the damage, in the erection of a temporary bridge by the Royal Engineers*

St. Pancras Station, L.M.S.R., suffered considerable bomb damage during an air raid which occurred on May 10, 1941. The above illustration shows demolished platform ends and rolling stock, which resulted from a bomb which fell near the buffer stops

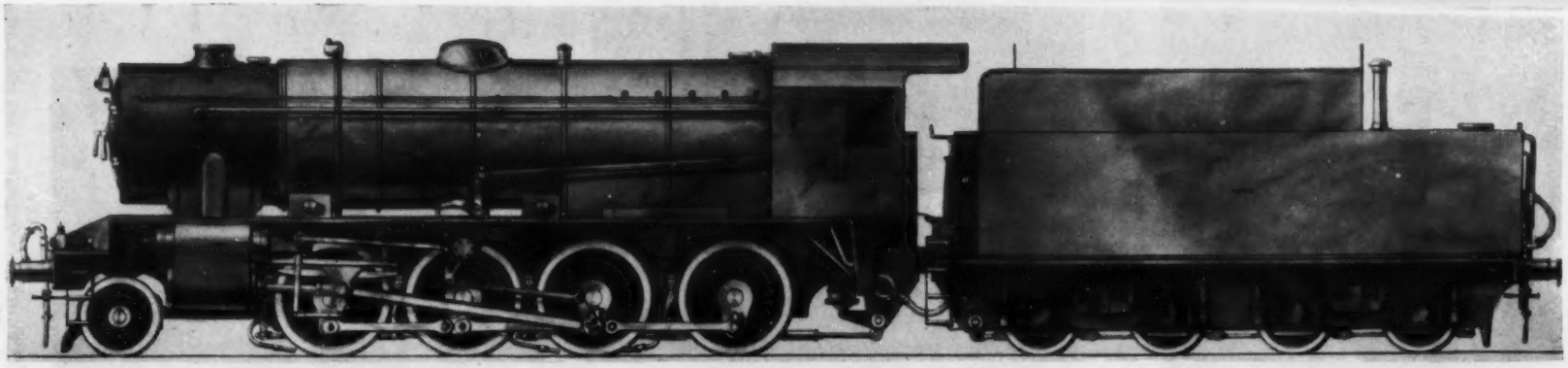
York Station, L.N.E.R., was a victim of the "Baedeker" air raid on April 29 last. The illustration above was made from a photograph taken shortly after the raid and shows some of the burned-out coaches of the 10.15 p.m. express, Kings Cross to Edinburgh

2-8-2 type American-built locomotive for service in the Middle East. The first to be completed was turned out on February 20, less than three months from date of ordering

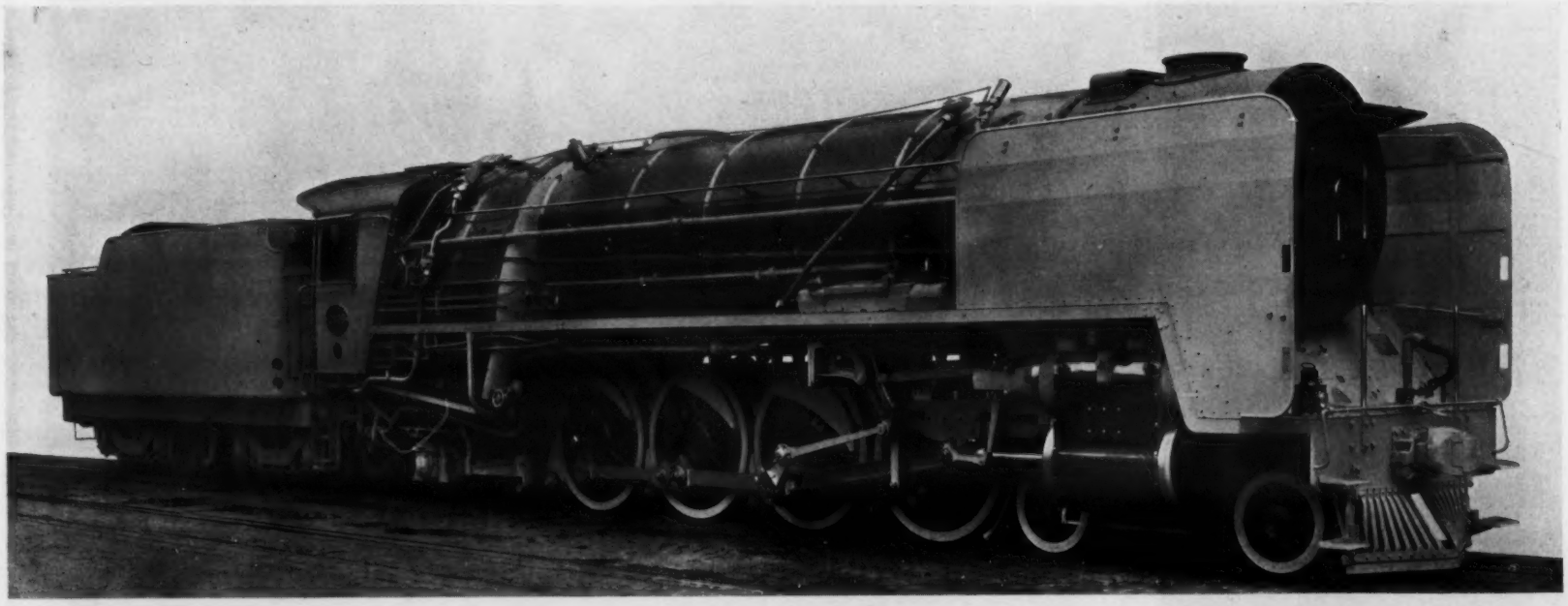


One of the new 0-6-0 freight locomotives built by the Southern Railway to cope with heavy wartime traffic

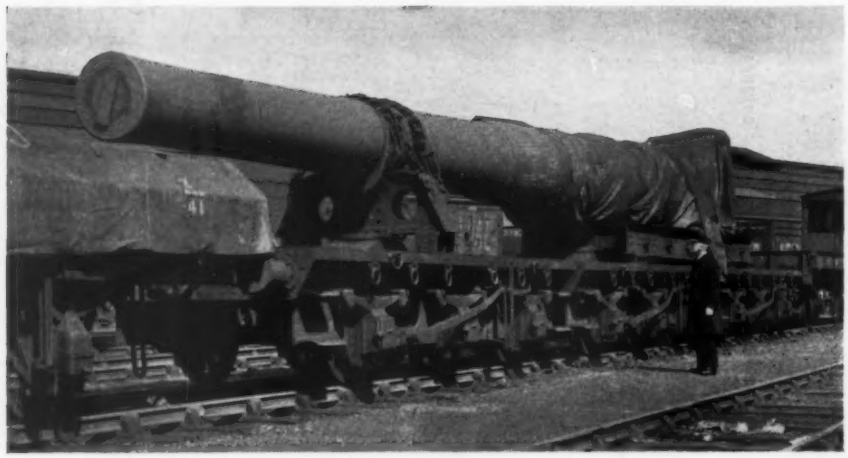
One of the new 0-6-0 freight locomotives built by the Southern Railway to cope with heavy wartime traffic



Ministry of Supply "Austerity" locomotive, combining efficiency and economy of production. Renewable parts are duplicated with those of L.M.S.R. standard engines



One of the class "15 F" 4-8-2 passenger and freight locomotives of the South African Railways. The British Ministry of Supply recently ordered thirty of these heavy main-line engines, from British manufacturers, for use on the 3 ft. 6 in. gauge South African Railways, as a result of the visit to this country of the Hon. F. C. Sturrock, Minister of Railways & Harbours, Union of South Africa

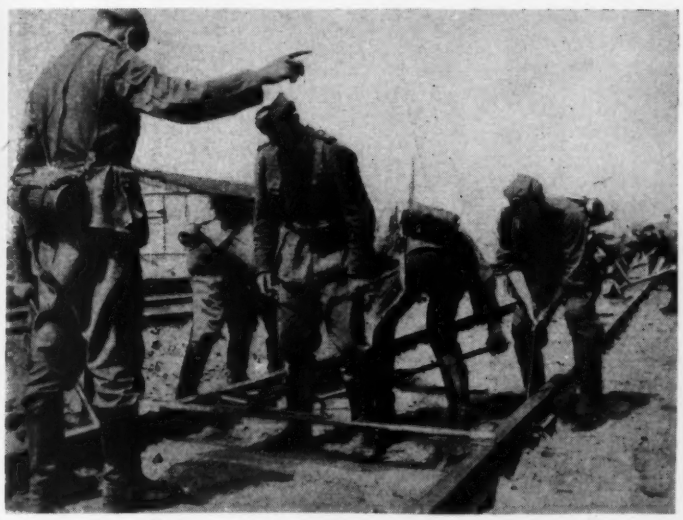


Left : A load in transit on the G.W.R. which shows clearly why the public is asked "Is your journey really necessary?"

Right: General view of one of the 18 bogie locomotives rebuilt from old stock by the L. P. T. B. for clearing conductor rails of sleet and ice

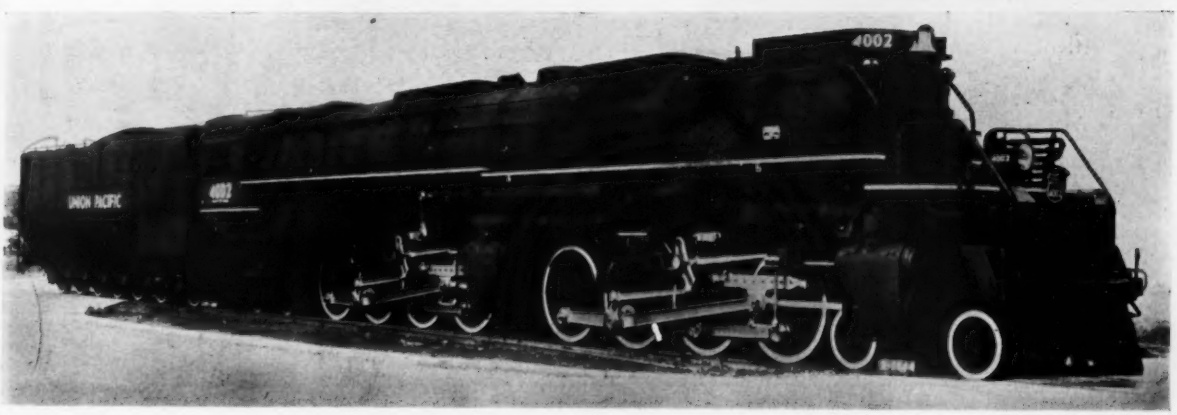
New Zealand army engineers in Syria landing locomotives by lighters. This illustration shows the first occasion this work was carried out successfully

A Russian armoured train named "Soviet Armenia," built at Moscow with funds collected in the Armenian Republic

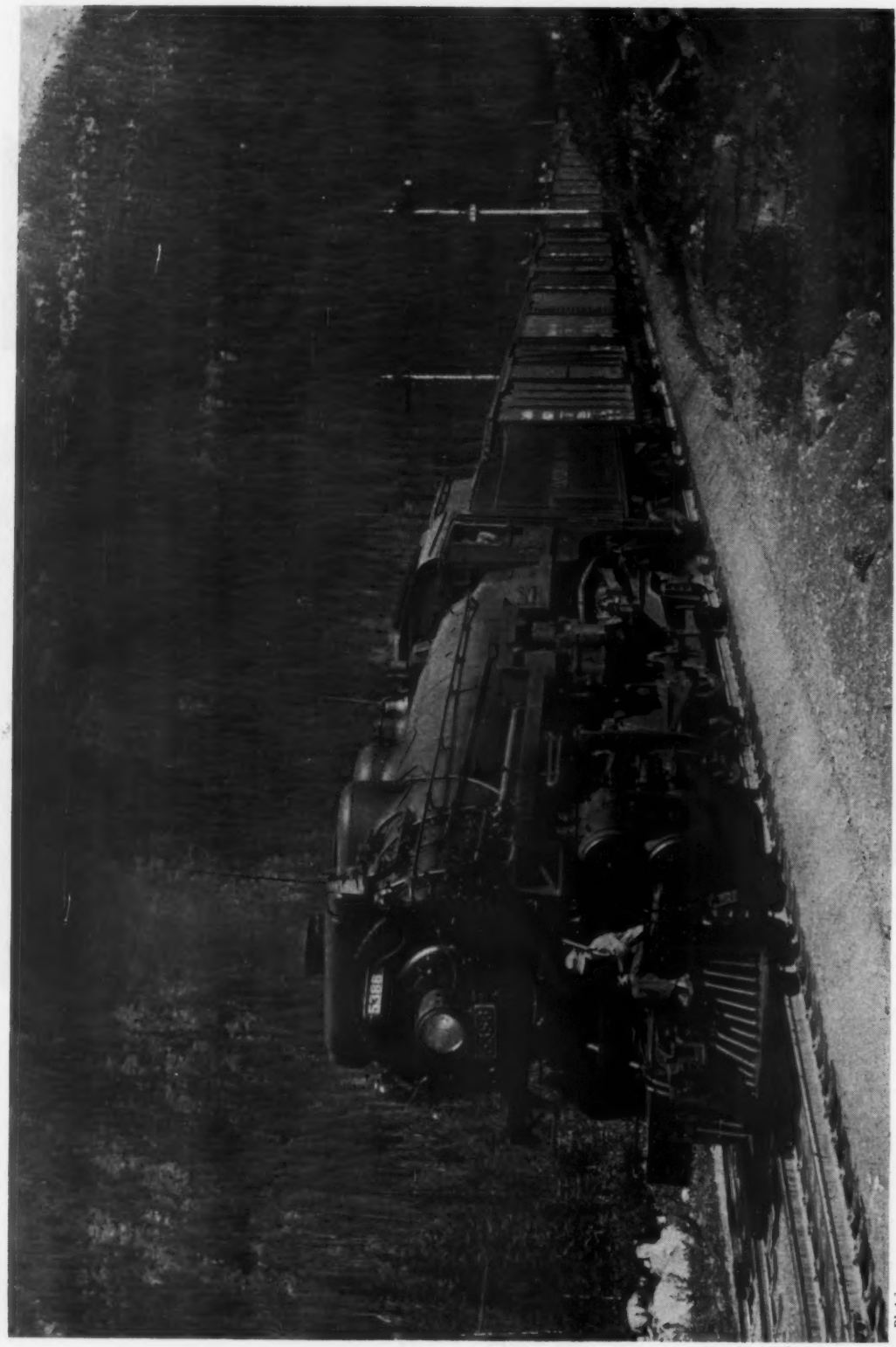


Germans engaged on converting the gauge from 5 ft. to 4 ft. 8½ in. on railways in German-occupied Russia

Where the lines have not been damaged too severely by the retiring Russians, it is necessary only to move one of the flat-bottom rails inwards by 3½ in. on the existing sleepers. Points and crossings obviously provide the main difficulty



One of the twenty new 4-8-8-4 articulated locomotives, designed for a speed of 80 m.p.h., and weighing, with tender, 534 (long) tons, for fast freight service on the Union Pacific Railway



[G. H. Soole

Photo]

CLIMBING THE "BIG HILL," CANADIAN PACIFIC RAILWAY

2-8-2 No. 5386 on an eastbound freight is attacking the 1 in 45 ascent from Field to Hector. An interesting item in this illustration is the row of "hoboes" sunning themselves on the roof of the freight cars; they will not find this form of free travel so pleasant when the spiral tunnels on the grade are reached. For these tunnels the engine headlight has been switched on

RAILWAY NEWS SECTION

PERSONAL

L.M.S.R. Appointments

The L.M.S.R. announces the following appointments :—

Mr. E. D. Farrar, Joint Goods Agent, Huddersfield (L.M.S.R. & L.N.E.R.), to be Goods Agent, Bristol, *vice* Mr. C. M. Jones, promoted.

Mr. H. Grindrod, Goods Agent, Wakefield, to be Joint Goods Agent, Huddersfield (L.M.S.R. & L.N.E.R.).

Mr. G. L. Enright, Goods Agent, Batley, to be Goods Agent, Wakefield.

Mr. B. Audsley, Assistant Chief Staff Clerk, District Goods Manager's Office, Leeds, to be Goods Agent, Batley.

Mr. J. T. Wiggans, Assistant Stationmaster, Manchester (Victoria), to be Stationmaster, Bolton (Trinity Street), *vice* Mr. A. Day, retiring.

Mr. E. Taylor, District Controller, Huddersfield, to be District Controller, Wakefield, *vice* Mr. J. I. Milner, retired.

Mr. F. W. Youd, Assistant to Divisional Superintendent of Operation (Accommodation & Signalling), Manchester, to be District Controller, Huddersfield.

Mr. W. Lamont, Assistant District Controller, Motherwell, to be District Controller, Kilmarnock, *vice* Mr. H. Murray, retiring.

Mr. T. F. Mitchell, District Locomotive Superintendent, Plaistow, to be District Locomotive Superintendent, Wakefield, *vice* Mr. D. O'Hara, retiring.

Mr. G. H. Morris, Substation & Track Engineer, C.M.E. & E.E. Departments, Manchester, to be Resident Engineer, C.M.E. & E.E. Departments, Manchester.

Mr. R. C. Smith, Resident Engineer, C.M.E. & E.E. Departments, Birkenhead, to be Resident Engineer, C.M.E. & E.E. Departments, Formby.

The committee of the Automobile Association has appointed Mr. E. H. Fryer to be Secretary, in succession to the late Sir Stenson Cooke. Mr. Fryer was formerly Deputy Secretary, a position which he occupied for nearly 20 years.

The King has approved the appointment of Colonel the Rt. Hon. D. J. Colville, T.D., M.P., as Governor of Bombay, in succession to Sir Roger Lumley, G.C.I.E., T.D., whose term of office expires next March. Colonel Colville was formerly a Director of David Colville & Sons Ltd. He was Secretary of State for Scotland from 1938 to 1940.

Mr. L. B. Unwin, Vice-President & Treasurer of the Canadian Pacific Railway, and President of Canadian Pacific Air Lines Limited, has been placed in charge of the Consumer-Rationing Administration of the Wartime Prices & Trade Board, Dominion of Canada. The administration, which has been developed out of the organisation of the former Ration Division of the board, will co-ordinate all consumer-rationing facilities directed by the board.

Mr. J. C. L. Train, M.C., M.Inst.C.E., Engineer, Southern Area, L.N.E.R., who, as recorded in our December 4 issue, has been appointed Chief Engineer, with responsibility for the civil-engineering and signal and telegraph work of the whole system, entered the Engineer's Office of the former North British Railway in Edinburgh as a pupil in 1908, when the late Mr. James Bell was Chief Engineer and Mr. C. J. Brown, Assistant Engineer. Subsequently, Mr.

Photo] [Lafayette

Mr. J. C. L. Train, M.C.

Appointed Chief Engineer, L.N.E.R.

Train served under both Mr. C. J. Brown and Mr. W. A. Fraser when they were Chief Engineers in that office. During this period he gained experience both in the office and outside on such works as the Portobello widening, the Thornton-Leven widening, and Arbroath Station reconstruction, and passed his Institution of Civil Engineers' examinations. In 1912 he accepted a post in London under his former chief, Mr. C. J. Brown, who by that time had become Chief Engineer of the former Great Northern Railway. Thereafter, as Assistant Resident, and then Resident Engineer, he had charge of the construction of the Tickhill Light Railway, the Kirkstead & Little Steeping Railway, the Hertford & Stevenage Railway, and the goods-way, Kings Cross. In August, 1914, he enlisted in the Royal Fusiliers and later was given a commission in a field company, R.E. He served on the Ypres, Somme, and other fronts, and, after being wounded in 1916, was given command of the drafting company at the R.E. Depot, Newark-on-Trent. Mr. Train returned to France subsequently and was awarded the M.C. in 1918 while in command of a field company, R.E. He was demobilised in June, 1919, with the rank of Major, and in 1921 he was appointed Personal Assistant to the Chief Engineer, G.N.R. In this capacity he was made responsible by Mr. Brown, among other tasks, for introducing for the first time to this country the Hallade track recorder and Hallade method of adjusting curves, and for some early experiments in the welding of worn crossings, the sectioning instead of the weighing of rails, and the working of amalgamated length gangs. Three years later Mr. Train was appointed Assistant Industrial Agent in the Chief General Manager's Office, and was placed in charge of the Works Section of that office in 1925. In November, 1927, he was appointed Assistant to the Chief General Manager (Works), and two years later he was transferred to Glasgow as District Engineer, Western Section, Southern Scottish Area. In 1934, he became Assistant Engineer (Maintenance), Southern Area, and, when Mr. Inglis was appointed Engineer, Southern Area, L.N.E.R., at the beginning of 1937, Mr. Train was appointed Assistant Engineer of that area. He became Engineer, Scottish Area, in October, 1938, and was appointed Engineer, Southern Area, in 1941.

Mr. D. E. Galloway retired on December 1 from the position of Assistant Vice-President (Telegraphs), Canadian National Railways, which he had held for eleven years, after nearly 42 years' service with the Grand Trunk and Canadian National Railways. Mr. Galloway's duties have been taken over by Mr. W. M. Armstrong, Assistant Chief of Research & Development, who has been appointed General Manager (Telegraphs).

The late Sir Trevredyn Wynne, who was Chairman & Managing Director of the Bengal-Nagpur Railway Company from 1930 to 1942, left £11,226.

Mr. H. R. Ricardo, B.A., M.I.Mech.E., F.R.S., a Vice-President of the Institution of Mechanical Engineers, has been elected an Honorary Member of the American Society of Mechanical Engineers, New York.

Kumode Bhandu Chatterjee, Stationmaster, Kiul, East Indian Railway, Bihar, has been awarded the George Medal for outstanding gallantry in saving two wagons containing live ammunition when the station buildings at Kiul were looted and set on fire, as were the two wagons, by a riotous mob several thousands strong.

The Rev. Douglas Ellison, who died at Sidmouth on November 23 at the age of 79, was head of the South African Church Railway Mission from 1892 to 1908, and of the Railway Mission in the diocese of Qu'Appelle, Canada, from 1910 to 1913. When he began work in South Africa, his activities were limited to the Grahamstown diocese, which was covered by one

man and his dog. Sixteen years later, the work extended from the Cape to the Victoria Falls, and occupied the full time of ten priests.

Mr. H. Rudgard, M.I.Loco.E., A.M.I.Mech.E., Divisional Superintendent of Operation, Derby, L.M.S.R., who, as recorded in our December 4 issue, has been appointed Superintendent of Motive Power, entered the service of the former Midland Railway in 1900, as a pupil under the late Mr. S. W. Johnson, Locomotive Superintendent of the former Midland Railway. After going through the various workshops, he obtained six months' firing experience before entering the drawing office, and later was appointed to be District Locomotive Superintendent at Skipton, at Derby, and at Plaistow (London Tilbury & Southend Section). Mr. Rudgard was called up in the Territorial Army in 1914, and served for 20 months in the trenches; later he was attached to the Royal Engineers, Light Railway Section, as Superintendent of the Light Railways, 4th Army, afterwards commanding the Light Railway Workshops, Beaurianville, B.E.F., and Carriage & Wagon Depot, Audruicq, B.E.F. He retired from the Army with the rank of Lt.-Colonel. During his service in France and Belgium he was wounded twice, and on two occasions he was mentioned in despatches. In 1919 Mr. Rudgard was appointed Assistant Superintendent of Freight Trains, Midland Railway, Derby, and, on the grouping of the companies, he was appointed Assistant to the Motive Power Superintendent, L.M.S.R., Derby. In February, 1932, he became Divisional Superintendent of Motive Power (Midland Division), Derby, and was appointed Assistant Divisional Superintendent of Operation, Derby, in June, 1935; he became Divisional Superintendent of Operation there in 1937. Under Mr. Rudgard's leadership the Midland Division won the Express Passenger Train Competition for 1938, which carried with it the Byrom Cup; also the 1938 Divisional Freight Train Competition. In 1923 Mr. Rudgard was appointed to serve on a committee at the War Office to deal with the formation of the Supplementary Army Reserve, and in 1925 he received a commission in the Land Forces as Lt.-Colonel. He is an Associate Member of the Institution of Mechanical Engineers, a Member of the Institution of Locomotive Engineers, and a Member of the Institute of Transport. Since the present war began Mr. Rudgard has been acting with Mr. J. E. Kitching, Mineral Manager, L.N.E.R., as Liaison Officer with the Midland (Amalgamated) District Coal Mines Scheme, and jointly there has been developed a very careful system of block coal train working, which has benefited considerably the M. (A.) D., the railways, and the consumers.

Mr. H. Rudgard
Appointed Superintendent of Motive Power, L.M.S.R.

Mr. J. W. Watkins, D.S.O., M.C., Assistant Divisional Superintendent of Operation, Derby, L.M.S.R., who, as recorded in our December 4 issue, has been appointed Divisional Superintendent of Operation, Derby, entered the service of the former Midland Railway on April 1, 1905, as a junior clerk at Ashchurch, and served at several stations until he joined the ranks of the Gloucestershire Regiment on August 31, 1914, proceeding overseas in March, 1915. He subsequently received a commission in the field and was posted to the 2nd Battalion, Lancashire Fusiliers, serving with that regiment until May, 1918, and rising to the rank of Lt.-Colonel in command of the battalion. He was awarded the D.S.O. and the M.C., and was mentioned in despatches four times. He was wounded in May, 1918, and, after recovering, served in England until leaving the Army with the rank of Lt.-Colonel in July, 1919. Upon his return from Army service, Mr. Watkins was posted to the headquarters staff of the former Midland Railway, dealing particularly with staff matters, and continued in the same position under the grouping. In 1929 he was appointed Assistant (Outdoor Section), Chief General Superintendent's Office, and in January, 1932, he was appointed Assistant Divisional Superintendent of Operation, Derby. In June, 1935, consequent upon the merging of the traffic and motive-power responsibilities under the Divisional Superintendent of Operation, his designation was changed to Assistant Divisional Superintendent of Operation (Traffic). He was appointed Assistant Divisional Superintendent of Operation, Derby, in 1937. Mr. Watkins is a member of the Institute of Transport, and has acted since the early part of the war as Railway Liaison Officer to the Regional Transport Commissioner, North Midland Region. He comes of a family associated with the railway service for a number of years, his father having served for 50 years with the former Midland Railway Company.

Mr. J. W. Watkins, D.S.O., M.C.
Appointed Divisional Superintendent of Operation, Derby, L.M.S.R.

Mr. E. A. W. Dickson, who, as recorded in our November 27 issue, has been appointed Assistant Secretary to the London & North Eastern Railway Company from January 1 next, was educated at Haileybury College, and at Gonville & Caius College, Cambridge, where he obtained first class honours in the Classical Tripos, and entered the company's service as a traffic apprentice in 1926. After receiving training in operating, commercial, and locomotive running departments, he entered the Chief General Manager's Office in the Rates & Statistics Section in 1929. He was attached to the District Superintendent's Offices at Newcastle and Sunderland in 1932; and a year later he returned to headquarters to take charge of the Shipping Section of the Chief General Manager's Office. From 1934 to 1939 he was Assistant District Goods Manager, Newcastle-on-Tyne, and in 1938 he was appointed a member of the All-Line Committee of Inquiry into District Office Organisation. In 1939 he became Rates & Statistics Assistant to the Chief General Manager. Mr. Dickson's services were loaned to the Railway Executive Committee in 1941 for special duties; he returned to headquarters later in the year, and in 1942 he was appointed to the position of Secretary to the L.N.E.R. Committee on Post-War Development, which at the time had been newly constituted.

Mr. E. A. W. Dickson
Appointed Assistant Secretary, London & North Eastern Railway Company

TRANSPORT SERVICES AND THE WAR—170

Wagon Supply

In order to ensure that the production of coal is not hindered by shortage of wagons, instructions were recently issued that until further notice railway-owned mineral end-door wagons and requisitioned private owners' wagons are not to be loaded with general merchandise in classes 7 to 21, except at ports where it is necessary to clear import traffic and at stations where such traffic is consigned direct to a colliery. Immediately such wagons are released they will be placed at the disposal of the Central Wagon Control Office for distribution for coal-class traffic.

Christmas Parcels by Rail

In peacetime, 1,000 special parcels trains were needed to move mailbags and parcels at Christmas time. During the coming Christmas period, by reason of shortages of supplies of wrapping materials, rationing of food and clothing, there will probably be fewer parcels. On the other hand, compared with a year ago, 200 more trains are required every day for military and other vital war traffics, and it is highly desirable to reduce the number of Christmas parcels to the minimum.

Misuse of Tyres

In view of the urgent necessity for conserving rubber supplies (about 70 per cent. of which is used in the manufacture of tyres) the Minister of War Transport has made the Motor Vehicles (Restriction of Use) (No. 2) Order, 1942, which will come into force on January 1, 1943. This Order makes it an offence to use a motor vehicle or trailer on a road when the fabric of a tyre is showing through the tread.

If a tyre is handed to an authorised tyre depot before the fabric shows, it can usually be retreaded, and the equivalent of a new tyre produced using less than 50 per cent. of the crude rubber necessary to manufacture a new tyre. If, however, a tyre is used after the fabric is visible it is beyond repair, it can never be retreaded and is ruined for further use.

The Tilling Group of Companies has taken the characteristic step of securing a "Fougasse" drawing (reproduced herewith), for exhibition in bus garages, to impress upon bus crews the need for tyre care—almost certainly a more effective step than mere emphasis on the legal penalties for infringement of the new Order.

ISSUED BY THE TILLING GROUP OF OMNIBUS COMPANIES

The "Fougasse" poster, prepared for the Tilling Group of Companies, to encourage tyre economy

Reservation of Seats

The Minister of War Transport has decided that no hotel porter or railway porter may reserve a seat in a railway carriage by placing luggage or any other article thereon, unless the passenger who intends to occupy that seat is present when the luggage or other objects are placed thereon. The railway companies have been directed to arrange accordingly, and are advised that the expression "railway porter" includes any uniformed member of railway station staff. Some of the implications and ambiguities of this instruction are discussed in our editorial columns (page 596).

Civilian Air Raid Casualties in November

The Ministry of Home Security has announced the following figures of civilian casualties due to air raids in the United Kingdom during the month of November:—

Killed (or missing, believed killed) ...	24
Injured and detained in hospital ...	38

The casualties are classified as follow:—

	Men	Women	Under 16
Killed (or missing, believed killed)	8	12	4
Injured and detained in hospital	23	11	4

British Air Services

The following is a list of the public air services at present working within the limits in the British Isles. The current timetables are dated October 5, with the exception of the Dublin services, which came into force on November 16, when the English terminus was transferred from Manchester (Barton) to Liverpool (Speke):

GREAT WESTERN & SOUTHERN AIR LINES LIMITED
Lands End to Scilly (St. Mary's Airport).

WEST COAST AIR SERVICES LIMITED in association with AER LINGUS TEORANTA
Liverpool (Speke Airport) to Dublin.

ISLE OF MAN AIR SERVICES LIMITED
Liverpool (Speke Airport) to Isle of Man.

RAILWAY AIR SERVICES LIMITED
Liverpool (Speke Airport) to Belfast.
Glasgow (Renfrew Airport) to Belfast.

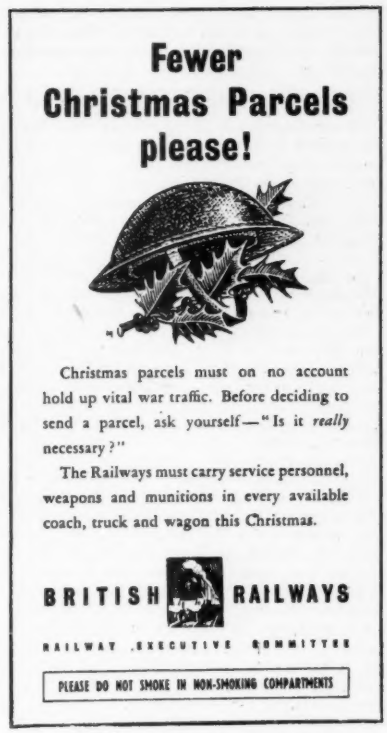
SCOTTISH AIRWAYS LIMITED
Glasgow (Renfrew Airport) to Campbeltown (Kintyre Airport) and Islay (Glenegedale Airport).
Glasgow (Renfrew Airport) to Tiree (Reef Airport), Benbecula (Balvanich Airport), North Uist (Sollas Airport), and Stornoway.
Inverness to Kirkwall and Shetland.

ALLIED AIRWAYS (GANDAR DOWER) LIMITED
Aberdeen to Wick, Thurso, Stromness, Kirkwall, and Shetland (Sumburgh Airport).

All reservations are accepted on the understanding that they are liable to cancellation on instructions from the Air Ministry if accommodation is required for Government Priority passengers. In such an event, ordinary passengers are off-loaded strictly in the reverse order of booking.

Plywood for Canadian Wagons

Plywood is replacing steel sheeting in the construction of 750 goods vehicles for the Canadian Pacific Railway, thus releasing almost 700 tons of steel for other essential war work. In experiments conducted by the railway, it was found that Canadian wood could be used successfully to replace steel sheeting for outside panels of box cars. A sample car was constructed using five-ply British Columbia fir, $\frac{3}{8}$ in. thick, to replace the $\frac{1}{16}$ in. steel sheeting in the panels. It was subjected to severe tests in the freight yards of Vancouver and proved entirely satisfactory. In a vehicle of the new design, the net weight of steel will be reduced by approximately 1,800 lb. The lighter construction will enable the car to carry additional freight, and the company has estimated that the 750 cars now on order will be able to handle 700 extra tons of freight a trip.



R.E.C newspaper announcement

Canadian Transport-Rationing Prospects

Mr. R. C. Vaughan, President & Chairman, Canadian National Railways, on his return to Montreal recently from his yearly inspection trip, said that he did not see any necessity for rationing rail transport at present. Although the C.N.R. was meeting very great demands already, he hoped that the day never would come when it would not be asking for still more wagonloads. He pointed out that there had been restrictions on passenger travel already, in the sense that certain special fares had been cancelled; but, apart from these, he thought that there would be no need for rationing if the situation became no worse. He added, however, that, if difficulties arose in connection with the movement of troops, passenger travel would have to be curtailed; a limiting factor in the amount of traffic the C.N.R. could handle was the fact that no new passenger rolling-stock equipment was available. Mr. Vaughan stated that more of the "6200" class mixed-traffic locomotives were on order, and that, if the steel supplies were forthcoming, the C.N.R. hoped also to obtain further goods wagons. Due to the reconditioning of many of the older types, more

locomotives were now in service than before the war; he estimated that about 150 has been restored to first class working condition.

Nova Scotia Rations Taxi Travel

Taxicab drivers in Nova Scotia from December 1 have orders to give priority to essential war workers, and to transport ordinary fares only if they have "time, tires, and gasoline to spare." The Regional Transport Controller, Mr. Albert Wagner, classed cab fares into three groups. First, steamship captains and officers, and immigration and customs officials on business, persons being transferred to hospitals, doctors, firemen, and others travelling under the direction of the Ministry of War Transport. Second are persons wishing to go to or from railway stations or between points not served by trams (such as in Halifax). The third group comprises those travelling on less essential duty.

Tyre Rationing in Honduras

The Honduran Government has asked the committee which was responsible for the petrol rationing scheme to prepare a tyre rationing programme. The committee has been authorised to determine who shall use such tyres as are imported into the country, irrespective of who may import them. In July last this committee reduced petrol consumption, on the basis of July, 1941, consumption, by 50 per cent. in southern Hunduras, and 60 per cent. in northern Honduras.

New American Transcontinental Highway

An agreement was signed recently between Nicaragua and the U.S.A. for the construction of a highway linking the Atlantic and Pacific coasts of Nicaragua. The U.S.A. will provide the money for the highway, which is estimated to cost £1,250,000.

This road should prove of considerable strategic value, and will also act as a feeder to the Pan-American Highway. The section of the latter in Nicaragua is well advanced. Reference to this was made at page 569 of our May 15 issue.

Road Transport Restrictions in Panama

Tyre shortage in Panama has resulted in a substantial decline in the use of motorcars and lorries, and during August private individuals were encouraged to use small coastwise vessels. A petrol-rationing scheme is being evolved, primarily to restrict the use of tyres. One serious difficulty has been the limitations on the movement of agricultural products from the interior of the country to the principal centres of population, namely, Panama City and Colon, not because of Government limitations, but because of shortage of road transport supplies.

U.S.A. Government Appropriates Closed Lines Material

The United States War Production Board has begun to requisition the permanent way and other materials of lines, the abandonment of which has been authorised by the Interstate Commerce Commission. The first of these lines is the Hastings-Linwood section of the Chicago & North-Western Railway, and is 102 miles in length. The Nebraska State Railway Commission had previously opposed its closing, but dismantling was expected to begin as soon as the grain in the elevators along the line could be moved. In September the War Production Board also requisitioned the permanent way and bridge material from the Red Oak-Dodgeville section, a 57-mile branch of the Illinois Central Railroad which was closed for traffic in July. A third line from Fayetteville to Fort Gibson, a 91-mile section of the St. Louis-San Francisco Railroad, has also been similarly requisitioned, so it is reported. This line was the subject of an application for abandonment before the Interstate Commerce Commission on July 20.

Horse Coaches in Eire

A further horse stage-coach service was inaugurated in Eire with the placing in service last October of a coach, seating eight passengers and equipped with pneumatic tyres, between Carne and Wexford, a distance of 14 miles, for which journey the return fare is 3s. The coach has a low-slung body, and is stated to have been built specially for the route. The owner and driver is Mrs. M. Ellard of Carne.

Lord Adare's coach service linking Limerick, Adare, and Rathkeale, which was begun on June 8 (see our June 19 issue page 683), conveyed more than 1,000 passengers in its first six weeks, including many shoppers as well as holidaymakers. The first coach, the *Shamrock*, was joined on August 17 by the *Thomond* (also secured in England). The service was suspended early in October, but is intended to be resumed next summer.

Indian Rails for War Purposes

The recently-issued report of the South Indian Railway Co. Ltd. (covering the financial year ended March 31, 1942), records a net decrease of 152 miles in the total route mileage of the company's system. Most of this is accounted for by the dismantling of two narrow-gauge and one metre-gauge line, as follows:—

Section	Gauge	Mileage	Date of closure
Tirupattur-Krishnagiri	2 ft. 6 in.	25	July 31, 1941
Dharmapuri-Hosur section of Morappur-Hosur Rly.	2 ft. 6 in.	73	July 31, 1941
Morappur-Dharmapuri section of Morappur-Hosur Rly.	2 ft. 6 in.		October 31, 1941
Madura-Bodinayakkanur	Metre	56	January 1, 1942

The permanent-way materials released from the narrow-gauge lines have been offered to the Indian Railway Board for war purposes, and that of the metre-gauge line is under despatch overseas for war purposes. These dismantlings comprise the whole of the company's mileage on the 2 ft. 6 in. gauge.

Tyre Rationing in India

A strict control has been established over the sale and acquisition of tyres in British India, under a tyre-rationing order issued by the Government of India on June 13 and effective immediately. Control is exercised through the various provincial governments, each of which is required to appoint a Provincial Rationing Authority having jurisdiction throughout the Province. The provincial governments are authorised to appoint, in addition, Area Rationing Authorities with jurisdiction in specified areas and in respect of specified vehicles or classes of vehicles.

A permit issued by the competent area rationing authority is required for every purchase of a new tyre or tube. With the exception of giant tyres (a tyre with a cross-section of not less than 5 in.) for commercial vehicles, permits are also required for the purchase of retreaded tyres or to have tyres retreaded. Permits are issued only in respect of vehicles which can be shown to be essential to the maintenance of war production or the health and safety of the community. No new or retreaded tyres may be supplied except against the surrender of worn tyres.

The order further provides that no person may retain, for a period of more than 10 days, any unserviceable tyre or tube, but must dispose of it to a recognised supplier or reclaim manufacturer.

A notice of June 25 fixed prices for unserviceable tyres and tubes sold to recognised suppliers who, in turn, sell to reclaim manufacturers.

New Highway in Syria and Iraq

A surfaced highway connecting Damascus (Syria) with Baghdad (Iraq) has recently been completed, according to press reports. About one half of the road, which is approximately 550 miles long, runs through Syria.

Turkish Railway Restrictions

Railway travel in Turkey has been restricted to travellers who can prove the urgency of their journeys, according to the Rome radio on November 26.

Transnistrian Railways

The Transnistria territory (occupied Russian country east of the River Dniester) has a railway system which is operated by the Roumanian State Railways as a separate unit. It is now subject to the Government transport regulations as applied to Roumania. The Roumanian language has been introduced, and the Roumanian scales of rates and fares are in force. A separate customs region has been established. Goods are conveyed inside Transnistria on Roumanian waybills, but all traffic between the territory and Roumania are carried on the international waybill forms as used on European railways. No through traffic between Transnistria and countries beyond Roumania is yet accepted.

Nationalising Swedish Highways

In response to what is stated to be a growing need for a centralised organisation to control highway construction and maintenance in Sweden, a nationalisation programme, proposed to become effective on January 1, 1944, was recently approved by the Riksdag (Parliament). The chief purpose of the programme is to effect a more equal distribution of the municipal burden of taxes, as it has been found that road taxes have been computed very unevenly in the various cities, rural communities, and road districts. Although the district road boards are said to have carried out excellent construction and repair work, the wider scope of activities since the war began is held to necessitate the co-ordination of the 170 different districts. A just distribution of costs and a more rational use of personnel and machinery are expected to result. The municipalities will be compensated for their loss of road taxes by funds from national taxes levied on motorcars, tyres, and gasoline.

Turin Air Raid Damage

Damage by R.A.F. raids on industrial buildings in Turin was very extensive, even before the strong raid by Bomber Command on November 27-28. Reconnaissance photographs have revealed the extent of the damage which includes (among many others) the Fiat railway workshop and timber yard, the Fiat motor and aeroplane works, the State Railway workshops (the main building received a direct hit), the Ceirano motor works, the Fiat steel works, the Porta Susa Station (in the centre of Turin), and the Porta Nuova Station (in the east of Turin).

Questions in Parliament

Reservation of Carriage Seats

Mr. Ellis Smith (Stoke—Lab.) on December 9 asked the Parliamentary Secretary to the Ministry of War Transport if he was aware that a railway porter and a Euston Hotel porter stood from 2.15 p.m. to 2.45 p.m. on No. 14 platform, Euston Station, on November 26, 1942, in order to reserve three first class seats; that a paper was pinned on the seats "Not for public use"; that both men were given gratuities, and many serving men and women of the armed forces were over-crowded in the train; and what action did he intend to take to stop this practice.

Mr. Noel-Baker: Three passengers from the Euston Hotel travelled on the 2.50 p.m. train to Stoke on November 26. Their luggage was taken to the train by one of the hotel porters, who placed it on three seats in one compartment. The porter stayed by the compartment to watch the luggage until the three passengers arrived. I am assured that no other porter attended to these passengers. One seat only was labelled "Not for public use"; the labelling was done, not by the porter, but by the Stationmaster's staff. My information is that the train was well loaded but not over-crowded. The Minister of Transport has given instructions that in future no hotel porter or other porter may reserve seats for intending passengers by placing luggage on them, unless the passengers are themselves present when this is done.

Mr. Ellis Smith (Stoke—Lab.), on December 9, asked the Parliamentary Secretary to the Ministry of War Transport if he would reduce the number of railway porters waiting in order to reserve first class seats at Euston and London Road Station, Manchester; why they were allowed to carry light suitcases and use trucks for the carrying of personal luggage, although men and women of the armed forces had to carry their kit and equipment, and women had to carry their young children, and other cases; and what action he intended to take.

Mr. Noel-Baker: I am assured by the competent authorities that the number of porters at these stations is not excessive in view of the various duties which they have to perform. Their services are available to all travellers, both services and civilian alike. Enquiries have shown that more third than first class passengers ask porters to help them to carry their luggage, and that a high proportion of those who do so belong to the Armed Forces. The porters at these and other stations have been instructed that they are not to reserve seats for passengers either in first or third class carriages unless the passengers are themselves present when the luggage is placed on the seats. The porters consider it as part of their duty to assist passengers generally to find seats, and in particular to help invalids, children, and also passengers such as troops, for whom special accommodation may have been reserved.

Mr. Smith: Would the Parliamentary Secretary give further consideration to this matter, and consider that the needs, in future, of troops, especially men and women carrying heavy equipment, should be given preference when trucks are being used on the platform?

Mr. Noel-Baker: I certainly wish to do everything to ease the burden on Service travellers, especially women Service travellers. We have been negotiating with the Service Departments in the hope that women will be allowed not to carry their kit with them every time they go on leave.

Mr. Austin Hopkinson (Mossley—Nat.) said that since the question was put on the Order Paper there had been a distinct improvement on the route to which reference had been made.

(*See editorial article, page* 596)

Retreaded Tyres

Mr. J. Parker (Romford—Lab.) on December 2 asked the Minister of Supply whether he was aware that 24 pieces of paper have to be filled up to complete the sale of one retreaded tyre to a commercial-vehicle operator, and to pass the surrendered tyre through a central inspection depot to a retreader for reconditioning; and whether he would save time and paper by reducing the number of forms requiring to be filled for this purpose.

Sir Andrew Duncan (Minister of Supply), in a written answer, stated: No, sir. Normally six forms in all, of which three are, in substance, carbon copies, are required to carry through the series of transactions referred to. Special care has been taken to simplify the procedure and minimise the use of paper and labour, consistent with maintaining a proper record of the transactions.

Export of Railway Rails

Dr. James Little (Down—C.) on December 3 asked the President of the Board of Trade why, in view of the scarcity of steel and the appeals made for railings and gates, even for the railings surrounding grave plots, 400 tons of the rails of the Clogher Valley Railway in Northern Ireland had been sold and exported to the neutral State of Eire.

Captain C. Waterhouse (Parliamentary Secretary, Board of Trade): Before the export of these light rails was allowed, extensive inquiries were made to discover whether they were needed in this country or in Northern Ireland, but no outlet for them was found. The undertakings in Eire which will be using these rails are performing useful services which indirectly assist the war effort. It therefore seemed that to use serviceable rails as scrap would in these circumstances be false economy.

Dr. Little: Were the Government of Northern Ireland consulted as to the sale and export of these rails at a time when there is such a scarcity of steel?

Captain Waterhouse: Yes, Sir; I understand that the Government of Northern Ireland supported the application.

Dr. Little: Did the Government of Northern Ireland consent to it?

Captain Waterhouse: My information is that it not only consented but supported one, at least, of these applications.

L.P.T.B. Employees

Mr. W. J. Brown (Rugby—Ind.) on December 3 asked the Minister of Labour whether he was aware that, in the case of the London Passenger Transport Board, an undertaking whose established machinery he had approved of as taking the place of the local appeal board under the Essential Work Order, men were being discharged without their cases being represented by an officer of their own union, without knowing the dates of the boards which had discharged them and without being given any opportunity of being present at the hearing of the case; and whether, in these circumstances, he would cease from recognising the established machinery of the board as being an acceptable alternative to the local appeal machinery provided for under the Essential Work Order.

Mr. Ernest Bevin (Minister of Labour & National Service): I have approved, for the purposes of the Essential Work Order, the disciplinary machinery under the existing industrial arrangements. The worker may be represented by an official of a union which is party to the arrangements. There was, until recently, a certain class of case in which the machinery did not permit the worker to be present personally on consideration of an appeal, but I am assured that this has now been remedied, and that the worker is in all cases given the opportunity of being present.

Mr. Brown: Is it not the most elementary principle of English justice that citizens are equal before the law, and is the Minister justified in using his powers to frustrate that principle?

Mr. Bevin: I am not aware that I am frustrating anything.

Railway Fares in Manchester Area

Mr. Ralph Etherton (Stretford—C.) on December 3 asked the Parliamentary Secretary to the Ministry of War Transport what adjustment was to be made in the anomaly to which his attention had been drawn of fares for local passenger traffic on the railways as compared with the buses in the Manchester area.

Mr. P. J. Noel-Baker (Joint Parliamentary Secretary, Ministry of War Transport): I am afraid that it would not be practicable to reduce the monthly return fares by rail to the level of lower fares by bus. I may remind Mr. Etherton, however, that season tickets are available by rail at low rates. On the routes to which my attention has been drawn, train loadings have been fully maintained during peak hours. The only reduction in traffic has been during the hours when cheap day tickets were formerly used for non-essential travel. The increase in passengers on the buses has been very small, and it has all been carried without difficulty by the existing services.

Mr. Etherton: Will the Parliamentary Secretary send someone down to see the overloading of the buses and the emptiness of the trains? Is he aware that the failure to make any adequate adjustment forces war workers, whose journeys are really necessary, off the railways on to the buses, causing unnecessary discomfort and damage to the war effort?

Mr. Noel-Baker: My answer was made after most careful inquiries by my advisers on the spot, both on the railways and on the bus routes. I am grateful to Mr. Etherton for raising this matter because it seemed that the abolition of the cheap day fares after 10 o'clock would have the effect of forcing passengers off the railways on to the roads, but I have reason to believe that that is not so. If Mr. Etherton can furnish evidence that it is so I will look into it, but at present my information is to the opposite effect.

Mr. Etherton: Will the Parliamentary Secretary look into the matter further, because there is very strong feeling about it in Manchester?

Mr. Noel-Baker: If there is any further evidence I will look into it, but both the railway authorities and the Manchester Corporation have given me contrary advice.

Transport Aircraft

Mr. E. Granville (Eye—Ind.) on December 3 asked the Minister of Aircraft Production whether he would consider setting up a committee of civil aircraft designers to work on new types of transport machines so that we might be able to take our place in the future development of international civil aviation.

Mr. Ben Smith (Parliamentary Secretary to the Ministry of Aircraft Production): I

cannot add to the reply made on September 30 to a question by Captain W. F. Strickland (Coventry—C.) that, while the Government intends to deal with this matter at the appropriate time, the work of aircraft designers must, at the present stage of the war, be devoted wholly to war requirements.

Mr. F. Montague (Islington West—Lab.): Is the department aware of the tremendous strides made by both the United States and Russia in respect of transport planes?

Mr. Smith: My department is fully seized of the strides made by those two countries; and, although we have at the moment no civil aircraft designers, as such, it is the intention of my department to look into the matter at an early date.

Mr. R. R. Stokes (Ipswich—Lab.): Is the Parliamentary Secretary aware that our American friends are continuing the development of transport planes, and is it not a fact that they will have a virtual monopoly at the end of the war?

Mr. Smith: My department is looking into the question of utilising some of the excellent bomber types for our own civilian use.

Mr. Stokes: They are no use.

Mr. Smith: My department must be the judge of that.

Mr. Granville gave notice that, due to the unsatisfactory answer, he would raise the matter on the Adjournment at the earliest opportunity.

Road Transport Speed Limit

Mr. W. H. Oldfield (Manchester, Gorton—Lab.) on December 9 asked the Parliamentary Secretary to the Ministry of War Transport if, in view of his appeal to reduce the speed of transport, any steps had been taken to alter the schedules to enable a more moderate speed of all road transport, or what action was to be taken apart from the appeal, seeing that men must run to the schedules.

Mr. P. J. Noel-Baker: Buses and coaches are already subject to a general maximum speed limit of 30 m.p.h. in daylight, and of 20 m.p.h. in built-up areas after dark. The time schedules of all bus and coach services operated under road service licences or permits are regulated by the Regional Transport Commissioners. In approving these schedules Regional Transport Commissioners give full consideration to speed in relation to the driving conditions on the route which each service follows. For this reason, I do not think it is necessary or desirable to undertake the general revision of schedules which Mr. Oldfield suggests.

Privilege Railway Tickets

Mr. Ness Edwards (Caerphilly—Lab.), on December 9, asked the Secretary of State for War whether privilege railway tickets available to soldiers' wives were also available to widowed mothers in relation to an only son, who, before the war, was her sole support, and, if so, on what conditions.

Sir James Grigg (Secretary of State for War) stated in a written answer: No, sir. The concessions granted by the railway companies to soldiers' relatives do not extend to a soldier's mother unless she is travelling to visit him in hospital.

United States Locomotives

Sir Ralph Glyn (Abingdon—C.) on December 9 asked the Parliamentary Secretary to the Ministry of War Transport whether the locomotives manufactured in the United States of America and now arriving for services on British railways were so designed and constructed as to be immediately available for use.

Mr. P. J. Noel-Baker (Joint Parliamentary Secretary, Ministry of War Transport): My department expect that the American locomotives to which Sir Ralph Glyn refers will be under steam within a few days of their arrival. I am glad to take this opportunity of expressing the gratitude of His Majesty's Government for the timely assistance which is being rendered to us by the United States.

Argentine Railways

Sir Robert Rankin (Liverpool, Kirkdale—C.) on December 9 asked the Secretary of State for Foreign Affairs whether he would instruct the Consular Service in the Argentine Republic to furnish a report in respect to the financial position of the British-owned Argentine railways, in which £250,000,000 of British capital was invested; and whether he would arrange for a copy of that report to be placed in the Library.

Mr. R. A. Eden (Secretary of State for Foreign Affairs): The companies concerned are all registered in this country, and the material necessary for a full understanding of their financial position is already available in London. In the circumstances I do not propose to adopt Sir Robert Rankin's suggestion.

(*See editorial article, page* 595)

C.N.R. Wartime Traffics

The vital contribution that the railways of Canada are making in the field of munitions of war for the United Nations was stressed by Mr. R. C. Vaughan, Chairman & President of the Canadian National Railways, in a recent address before the Empire Club, Toronto.

He said that the extent of the demands made on the railways might be gauged by the fact that last year the Canadian National system had moved more than 65,000,000 tons of munitions of war and other products of industry and agriculture and this year the volume of traffic showed a further substantial increase. Each day more than 100,000 wagons had been handled by their terminals, and frequently a single terminal received and despatched as many as 5,500 wagons in 24 hours.

New equipment had been built, some specially designed by the Canadian National to meet wartime requirements, including special hospital cars to serve as medical centres of trains carrying casualties; commissary kitchen cars for troop trains; long-table diners for the soldiers, providing 25 per cent. more seating capacity; coffee shops on wheels; and new types of coaches for industrial trains, with seating capacity increased to 122 persons. Special-type trains had been provided for the transport of enemy prisoners of war. A substantial number of heavy service locomotives had been added to the motive power. These were larger than the 6100 type and had an equal if not increased speed; they were capable of hauling trains of 100 wagons or more on the fast-goods services. The passenger services between Halifax and Montreal, a distance of approximately 850 miles, and between Winnipeg and Jasper, a distance of 1,000 miles, had been worked by locomotives without change. By this method of conserving locomotives, the power for war purposes had been further augmented.

The average freight train load had doubled since the war years of 1914-1919, and locomotives handled their loads at a speed increased by 60 per cent. At the same time, coal consumption for each ton of freight hauled had been greatly reduced, and this was an important saving; C.N.R. locomotives had run an aggregate of 81,000,000 miles last year. Betterments and improvements in all operating facilities throughout the system had been general; numerous passing tracks and yards extended, and new terminals constructed. Many such improvements had been made in the Atlantic Region, where the newest systems of traffic control had been installed; new engine terminals, coaling plants, fleets of lighters, and lighterage docks had also been added.

A poster issued by the Railway Association of Canada

Contracts and Tenders

The Rohilkund & Kumaon Railway has placed a contract for a boiler for a tank shunting locomotive with W. G. Bagnall Limited, to the inspection of Messrs. Rendel, Palmer & Tritton.

The following orders have recently been placed by the Egyptian State Railways:—

Docker Brothers: Jointing paste, and varnish.
Director of Transportation, War Office: Insulating millboards.
Davis & Timmins Limited: Screws.
P. & W. MacLellan Limited: Mild steel rounds, and plates.
Alfred Herbert Limited: Dies.
Samuel Osborne & Co. Ltd.: Drills, reamers, etc.
Arthur Balfour & Co. Ltd.: Drills.
P.O. Stores Dept.: Jack strips.
Standard Telephones & Cables Limited: Automatic telephone exchange spare parts.

PERMANENT WAY INSTITUTION.—The annual meeting of the Manchester & Liverpool Section will be held in the staff dining room, Hunt's Bank Offices, Manchester, on December 19, at 3 p.m., when, at the conclusion of other business, a lecture entitled "Notes on the Hallade Method of Track Maintenance," will be given by Mr. A. Downer. After a brief description of the Hallade recording instrument, Mr. Downer will explain various ways of controlling slues, and points to note when measuring curves for realignment, and will describe the methods used when working out schemes.

RAILWAY AND OTHER MEETINGS

South Indian Railway Co. Ltd.

The annual general meeting of the South Indian Railway Co. Ltd. was held at 42, Fairacres, Roehampton Lane, London, S.W.15, on December 9, Mr. P. H. Maflin, O.B.E., M.C., Deputy Chairman, presided in the absence of Sir Ernest A. S. Bell, C.I.C., Chairman & Managing Director.

Mr. Maflin said that he was sorry Sir Ernest Bell was unable to attend because of an attack of influenza, and went on to read the speech which Sir Ernest Bell would have made had he been present. In the course of this he said that he did not propose to make any remarks of a general nature and would therefore confine them to the accounts. The report and accounts gave all the salient points relating to the working of the railway for the year 1941-42. Gross earnings showed an increase of just over Rs. 103¼ lakhs or 18·32 per cent. on those of the previous year; working expenses had increased by just over Rs. 12¼ lakhs or 4·16 per cent. The final result was an increase in the net earnings of Rs. 91·28 lakhs or nearly 34 per cent. as compared with last year. Increases in gross earnings had been recorded under all heads, notably coaching traffic, Rs. 48 lakhs, and goods traffic, Rs. 47 lakhs.

The company's share of surplus profits amounted to Rs. 11,97,697, of which nearly Rs. 10¼ lakhs had been retained in India to meet Indian taxation, leaving a balance of only Rs. 1¾ lakhs for remittance home, which realised £13,102. As would be seen from the report, the board recommended a final dividend from surplus profits of 1 per cent. making, with the guaranteed interest, a total distribution for the year of 4½ per cent.; but if they took into account the amount of Dominion income tax relief recovered from the British income tax authorities and passed on to the stockholders, the total distribution for the year was equivalent to the payment of a dividend of 7·1 per cent. less income tax at 10s. in the £.

With regard to the results of working for the first half of the current year, that is, up to September 30, the Agent & General Manager had cabled that the gross earnings amounted to Rs. 4,03,77,000 as against Rs. 3,28,56,000 in the corresponding period last year, *i.e.*, an increase of Rs. 75,21,000. The working expenses showed an increase of Rs. 8,12,000, with the result that the anticipated amount of surplus profits for the half-year was Rs. 10,35,000 as against a round figure of Rs. 5,69,000 for the corresponding period last year. This figure would be subject to excess profits tax.

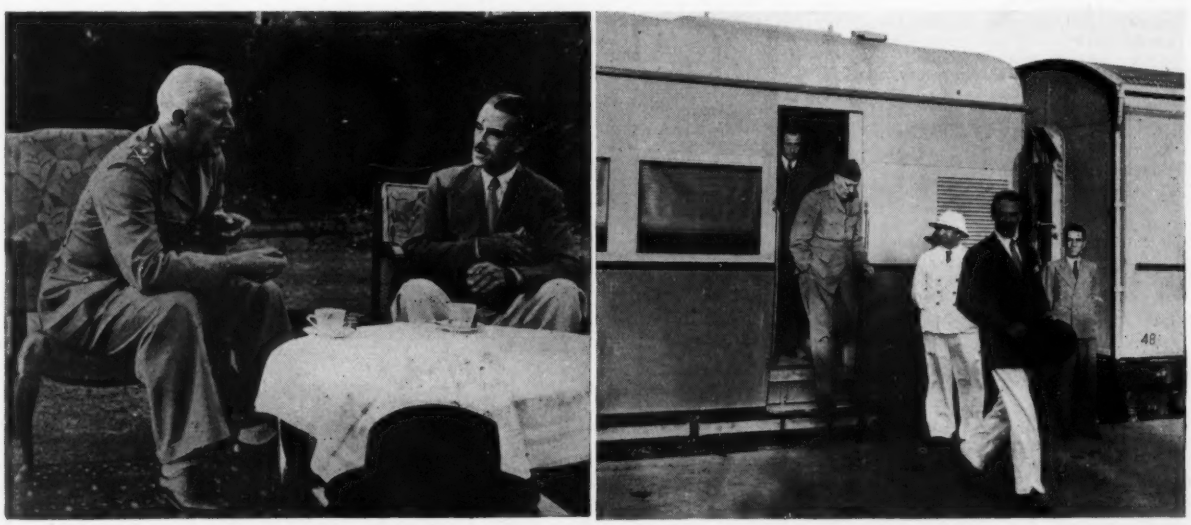
In his remarks last year he referred to a claim that the statutory basis in India should be considered as the basis for standard profits. This had not been accepted, but the company had been granted an addition to its basis representing arrears of renewals, and this had the effect of reducing the amount of excess profits tax payable.

The report and accounts were adopted.

The British Railway Stockholders Union Limited

The tenth annual meeting of the British Railway Stockholders Union Limited was held at Caxton Hall, Westminster, S.W.1, on December 11. Sir Charles Stuart-Williams, the Chairman, outlined the activities of the union, and in connection with the revised agreement between the railway companies and the Government, pointed out that the outstanding factor was the "ceiling" of £43·46 million which it fixed for the annual rental. No one, even those most concerned in the negotiations, appreciated at the time the amount of work being done and revenue earned by the railways. In this connection it was important to remember that the position of these lines just before the outbreak of the war was far from normal or healthy: the Square Deal proposals were still under consideration, and although they had been modified and curtailed in some important respects, at the same time a definite improvement from these measures which had been agreed in principle was confidently expected, and the present settlement, therefore, should have covered a substantial recognition of that fact, which by reason of the "ceiling" it certainly did not do. It was important that in any discussions affecting railways in the post-war period, this should be remembered. In addition, there were the matters of war damage and post-war rehabilitation, in both of which railways should not fare worse than ordinary industrial companies carried on ultimately and permanently in private interests, and without that constant regard for their public utility functions which was inevitable in the case of the railways, now as ever the backbone of national transport.

On the subject of nationalisation, the union was often asked whether it was in favour of it. It was doubtful whether a majority of stockholders would favour nationalisation, if the issue were to be decided in perfect freedom. But the future of the nation's transport would inevitably be decided as a whole and railways would have to be incorporated in a nation-wide system embracing road transport, canals, coastal shipping and air transport. Many stockholders would view with serious misgiving the complete transfer of the working of all railways to a railway civil service on the same lines as the post and telegraph services, and the trader and manufacturer would be even more strongly opposed to such a change, but a considerably greater degree of Government control than the pre-war years saw was to be expected. If such control were to be exercised with efficiency, enterprise and foresight, there was no reason why it should, in the long run, be detrimental to the interests of stockholders.



Left: Major-General H. C. Smith, M.C., Director-General, Iraqi State Railways, talking at railway headquarters with the Rt. Hon. R. G. Casey, Minister of State in the Middle East, during Mr. Casey's recent tour of Persia and Iraq. Right: Inspecting a new coach on the Iraqi State Railways

Notes and News

W. & T. Avery Limited.—Interim dividend 5 per cent. (same).

Kendall & Gent (1920) Limited.—Trading profit for the year to September 30, 1942, was £64,007 (£62,090). The final dividend is 10 per cent. with a bonus of 5 per cent., which, with the interim dividend of 5 per cent., makes 20 per cent. (same) for the year.

Leopoldina Railway Co. Ltd.—The company will on January 1 pay to holders of its 4 per cent. debenture stock on the register on December 2 interest at 2 per cent. actual, less tax, in respect of the half-year ended June 30, 1939. On July 1, 1942, a full year's interest was paid, covering 1938.

French Railways Company of the Province of Santa Fe.—It is announced that 3 per cent. mortgage obligations of this company, amounting to £3,700, have been drawn by lot, and subject to funds being received will be repaid at par on and after January 1 with accrued interest to December 31.

Institution of Mechanical Engineers.—A general meeting of the institution is to be held on December 18 (today) at 5.30 p.m. at Storey's Gate, Westminster, S.W.1, when papers on "The First Gas Turbine Locomotive," by Adolf Meyer, and "A New Rotary Compressor" by Mr. A. J. R. Lysholm, M.I.Mech.E., will be given.

Threat to Cutting Wall.—The wall of a cutting between Saltash and St. Germans Cornwall, recently developed a bulge, and trains from Plymouth to Penzance were diverted. Up passengers were detrained at St. Germans and proceeded by bus to Saltash, to join trains for Plymouth. Cornish Riviera trains were diverted *via* Wadebridge.

Canadian Pacific Railway.—Gross earnings for September, 1942, were $22,799,000, an increase of $1,222,000, and expenses were $17,081,000, or $1,442,000 higher. Net earnings at $5,718,000, were $220,000 less than for September, 1941. For the first ten months of 1942, gross earnings amounted to $209,926,000 an increase of $29,892,000, and the net earnings of $37,724,000 were $2,058,000 greater than for 1941.

South Indian Railway Co. Ltd.—Gross earnings for the year to March 31, 1942, were Rs. 6,69,10,062 (Rs. 5,65,49,873), expenses were Rs. 3,08,67,276 (Rs. 2,96,35,727), and net earnings Rs. 3,60,42,786 (Rs. 2,69,14,146). The company's share of surplus profits was Rs. 11,97,697 (Rs. 5,95,482), less Rs. 10,22,697 (Rs. 4,95,203) retained for taxation. The balance remitted to England realised £13,102 (£7,497). On the capital stock the total distribution for the year was 4½ per cent., made up of 1 per cent. from surplus profits and 3½ per cent. guaranteed interest. For the previous year the total distribution was 3½ per cent., entirely from guaranteed interest.

Road & Rail Central Conference.—At a meeting of the Road & Rail Central Conference at Bristol on December 9, co-operation was urged between road and rail services. Mr. A. E. Sewell, Goods Manager, Scottish Area, L.N.E.R., Chairman of the Railway Panel of the conference, said that both forms of transport should be healthy and self-supporting. He did not think that the times were going to be altogether comfortable for many of their road friends in their individual capacities, and he wanted them to feel that, having established a proper system of charging, those on the railways desired that both sides should be honourable competitors, each striving by the quality of service to persuade the trader to entrust to him the transport of his goods.

Butler Machine Tool Co. Ltd.—The directors recommend a dividend of 12½ per cent., less tax (the same), on the ordinary shares for the year ended September 30, 1942, to be payable on December 24. Net profit is announced as £45,983 (£38,438).

George Turton, Platts & Co. Ltd.—Net profit for the year ended July 31, 1942, was £228,250, against £157,500 for 1940-41. Tax provision was £27,866, and £8,379 (nil) was allocated to special depreciation reserve. The final dividend is maintained at 10 per cent., but the bonus is raised from 5 per cent. to 7½ per cent., making a total distribution for the year of 25 per cent. (22½ per cent.) and leaving £21,090 (£20,609) to be carried forward.

John I. Thornycroft & Co. Ltd.—Net profit for the year ended July 31, 1942, was £130,895, and the balance brought forward from the previous year was £68,304, making a total of £199,199. Of this amount interim dividends absorbed £30,375. Final dividends are :—3 per cent. on the cumulative preference shares, 5¼ per cent. on the participating preferred ordinary shares, and 8 per cent. on the ordinary shares. The sum of £50,000 is transferred to reserve account, and the amount carried foward is £75,609. Provision has been made in the accounts for depreciation on buildings, plant, and machinery. All the works of the company have been fully employed during the past year.

Buenos Ayres & Pacific Railway Co. Ltd.—Mr. J. A. Goudge, presiding at the annual general meeting on December 3, said that the company had at last had its claim for better tariffs recognised in a temporary increase, mainly given in response to a workmen's agitation, which might result in the company being able in the current year to offset some part of the very exceptional rises experienced in the cost of fuel and all materials. But, however this might result, the grave question of the future of all Argentine railways still remained to be dealt with as a matter of supreme national interest. It would be too late to prevent disaster once the greatest industrial organisation and transport industry in Argentina showed definite signs of breaking down. Stockholders would be glad to hear that payment of a half-year's interest on account of arrears on the B.A. & Pacific 4½ per cent. consolidated debenture stock and on the Argentine Great Western Railway 5 per cent. debenture stock would be made on February 26 next.

Central Argentine Payments.—Mr. W. Howard-Williams, Chairman of the Central Argentine Railway Limited, announced on December 3 that 1½ per cent. on the 4 per cent. debenture stock would be paid on account of the half-year ended December 31, 1940. The announcement was made at meetings of the holders of the 4 per cent. debenture stock, of the 5 per cent. redeemable debenture stock 1967/87, of the 5½ per cent. (bearer) notes, and of interest certificates of the company, at which meetings an extension of the existing moratorium for a period of one year, until December 31, 1943, was approved. It was explained by the Chairman that there had been a considerable reduction of debt both to the bankers and the Inland Revenue. The original scheme of arrangement sanctioned on November 21, 1940, granted a moratorium until December 31, 1942, and the latest previous payments of interest were on July 1, 1940, on the 4 per cent. debenture stock, on May 15, 1940, on the 5 per cent. redeemable debenture stock, and on July 1, 1940, on the 5½ per cent. bearer notes.

Alfloc Limited.—From December 31, Alfloc Limited (a subsidiary of Imperial Chemical Industries Limited) is to be incorporated with I.C.I. (Alkali) Limited.

British and Irish Railway Stocks and Shares

Stocks	Highest 1941	Lowest 1941	Prices Dec. 11, 1942	Prices Rise/Fall
G.W.R.				
Cons. Ord.	43¾	30¾	57	—
5% Con. Pref. ...	109½	83½	112½	—
5% Red. Pref. (1950)	105½	96½	107	—
5% Rt. Charge ...	129½	116	130½	—
5% Cons. Guar ...	128	110½	127½	+ 1
4% Deb.	113½	102½	114	—
4½% Deb.	115	105⅝	114¼	—
4½% Deb.	121½	112	119¼	—
5% Deb.	132	122	130¼	— ½
2½ Deb.	70	62⅜	75½	—
L.M.S.R.				
Ord.	17½	11	27	+ ½
4% Pref. (1923) ...	53	33½	62	—
4% Pref.	68½	48⅜	75	— ½
5% Red. Pref. (1955)	97⅛	77	101⅛§	— 1
4% Guar.	100	85¾	101	— ½
4% Deb.	105¾	97	106§	— 2¼
5% Red. Deb. (1952)	110½	106½	108½	+ 1½
L.N.E.R.				
5% Pref. Ord. ...	3⅜	2⅜	8½	+ ½
Def. Ord. ...	2	1¼	4¼	—
4% First Pref. ...	52½	33	60	— ½
4% Second Pref. ...	19⅜	10	30	—
5% Red. Pref. (1955)	79½	52	95	—
4% First Guar. ...	90⅛	74½	96	—
4% Second Guar. ...	80½	59	88	—
3% Deb.	79½	68⅜	82§	— 1
4% Deb.	104	91½	105§	— 1
5% Red. Deb. (1947)	106	102½	103½	+ ½
4½% Sinking Fund Red. Deb.	103½	99 11/16	103½§	— 1
SOUTHERN				
Pref. Ord.	65½	43½	74½	— ½
Def. Ord.	15⅜	9	22	—
5% Pref.	107	77½	110	—
5% Red. Pref. (1964)	107	89⅜	109½	—
5% Guar. Pref. ...	128	111	126½	—
5% Red. Guar. Pref. (1957)	114⅜	107½	112½	—
4% Deb.	112	102½	111½§	— 1
5% Deb.	130½	119	129½§	— 1
4% Red. Deb. (1962–67)	108½	102	109½§	—
4% Red. Deb. (1970–80)	108⅜	102½	109½§	—
FORTH BRIDGE				
4% Deb.	99⅜	90½	107	—
4% Guar.	99	85½	103½	—
L.P.T.B.				
4½% "A"	120 11/16	109½	117	—
5% "A"	130½	115½	127½	—
3% Guar. (1967-72)	103½	99½	98	2
5% "B"	117	102	116½	—
"C"	46½	28¾	55	—
MERSEY				
Ord.	24⅜	19½	26	—
3% Perp. Pref. ...	58	51½	59	—
4% Perp. Deb. ...	100	90	100	+ 1
3% Perp. Deb. ...	73½	63	78	—
IRELAND				
BELFAST & C.D.				
Ord.	4	4	9	—
G. NORTHERN				
Ord.	14½	3	28	+ ½
G. SOUTHERN				
Ord.	14½	5	20	—
Pref.	17	10	24	— 1½
Guar.	44	16	49¾	+ ¾
Deb.	61	42	67¾	— ¼

§ ex-dividend

OFFICIAL NOTICES

This step has been taken to simplify administration, and the business will be carried on as before, by the present staff of Alfloc Limited, at Ingersoll House, Kingsway, London, W.C.2. The same products will be sold as hitherto; and customers will receive the same technical service, which will be known as the Alfloc Water-Treatment Service of I.C.I. (Alkali) Limited, and which will operate from Ingersoll House.

Railway Wages Award.—The award of the Railway Staff National Tribunal on the railwaymen's claims for increased wages was issued on Friday night, December 11. In the case of staff who have received no additional war advances this year it gives 5s. a week to adult male staff, 3s. 9d. a week to adult female staff, 2s. 6d. a week to junior male staff, and 1s. 9d. a week to junior female staff. Those who have already received advances of 4s. a week this year will get an additional 1s. a week, but the advances are exclusive of the increase of 4s. 6d. a week in the total war wage of certain grades of the conciliation staff awarded by the preceding decision of the tribunal. The award will take effect from June 24. The National Union of Railwaymen had asked for an additional 10s. a week for all grades, and the Associated Society of Locomotive Engineers & Firemen had asked for increases ranging from 4s. to 12s. a week.

American Austerity Locomotives for Great Britain

The first consignment of American-built locomotives was handed over to Lord Leathers, Minister of War Transport, by Colonel Norman A. Ryan, Acting Chief of Transportation Corps, American Army, at Paddington Station on December 11. An illustrated article describing these locomotives was given in our December 11 issue, at page 581. Eight of these locomotives have been received so far, and they will be allocated to the main-line railways. Lord Leathers, in receiving the engine on behalf of the British railways, expressed thanks to the United States for the great assistance rendered to British rail transport.

Among those present were: Lord Leathers (Minister of War Transport), Mr. P. J. Noel-Baker (Joint Parliamentary Secretary, Ministry of War Transport), Sir Reginald Hill (Deputy Director-General, Ministry of War Transport), Sir Alan G. Anderson (Controller of Railways & Chairman, Railway Executive Committee), Lt.-Colonel Sir Alan Mount (Chief Inspector of Railways), Mr. Fleetwood C. Pritchard (Director of Public Relations, Ministry of War Transport), Mr. R. A. Riddles (Deputy Director-General for Royal Engineer Equipment, Ministry of Supply), Mr. G. Cole Deacon (Secretary, Railway Executive Committee), Sir Charles Hambro (Chairman, G.W.R.), Mr. Cyril E. Lloyd (Director, G.W.R. Sir Percy E. Bates (Director, G.W.R.), Sir Edward Cadogan (Director, G.W.R.), Sir James Milne (General Manager, G.W.R.), Mr. K. W. C. Grand (Assistant General Manager, G.W.R.), Mr. Gilbert Matthews (Superintendent of the Line, G.W.R.), Mr. F. W. Hawksworth (Chief Mechanical Engineer, G.W.R.), Mr. F. W. Lampitt (Chief Goods Manager, G.W.R.), Mr. S. G. Hearn (Operating Assistant to the Superintendent of the Line, G.W.R.), Mr. G. E. Orton (Commercial Assistant to the Superintendent of the Line & Public Relations Officer, G.W.R.), Mr. G. Stephens (Chief of Police, G.W.R.), Mr. F. P. Sealey (Manager, G.W.R. Royal Hotel & Paddington Refreshment Rooms), Sir Thomas Royden (Chairman, L.M.S.R.), Sir William V. Wood, President, L.M.S.R.), Mr. T. W. Royle (Chief Operating Manager, L.M.S.R.), Mr. W. A. Stanier (Chief Mechanical Engineer, L.M.S.R.), Sir Ronald Matthews (Chairman, L.N.E.R.), Mr. V. M. Barrington-Ward (Assistant General Manager (Operating), L.N.E.R.), Mr. E. Thompson (Chief Mechanical Engineer, L.N.E.R.), Lord Ashfield (Chairman, L.P.T.B.), Mr. John Elliot (Deputy General Manager, S.R.), Mr. W. J. England (Superintendent of Operation, S.R.), Mr. O. V. Bulleid (Chief Mechanical Engineer, S.R.), Mr. W. M. Perts (Commercial Superintendent, S.R.), Major-General John C. H. Lee (Commanding General of the Services of Supply, U.S. Army, E.T.O.), Colonel N. A. Ryan (Acting Chief of Transportation Corps, U.S. Army, E.T.O.), Lt.-Colonel R. S. Pickens (Public Relations Officer, Services of Supply, U.S. Army, E.T.O.), and Major S. H. Bingham (Officer in Charge, Military Railway Branch, Transportation Corps, U.S. Army, E.T.O.).

Above: The locomotive bearing the British and United States flags standing at the platform, Paddington Station, G.W.R., during the ceremony. Left: A view of the tender. Right: Lord Leathers, in the driver's cab, shaking hands with Colonel Ryan

Railway Stock Market

Sentiment in Stock Exchange markets has been assisted by the trend of the war news, but year-end influences prevented improvement in the volume of business, which was on a very moderate scale in most sections. Home railway securities were probably the most active department of markets, buying being based partly on the solid ground of yield considerations, and partly on the talk current in some quarters that the announcements, due in February, may show slightly better dividends on some of the junior stocks. These hopes are based on the assumption that growth in ancillary receipts may be sufficient to permit of better payments; as far as concerns the rental received under the financial agreement with the Government, this is, of course, fixed, and if any dividend increases were possible they could not be more than fractional in character. Apart from the talk of possible improvement in dividends, however, yields at current prices are attractive on the basis of the 1941 dividends, and all points considered, the prevailing view is that home railway junior stocks seem likely to show ready response in price when there is general improvement in the trend of Stock Exchange markets. At the slightly higher prices ruling at the time of writing, the yield on Great Western ordinary is rather more than 6½ per cent., that on L.M.S.R. ordinary and L.N.E.R. second preference fully 7½ per cent., while the return on Southern deferred is approximately 7½ per cent. It should not, of course, be overlooked that good yields are obtainable on L.M.S.R. preference stocks, and on L.N.E.R. first preference and Southern preferred, while, moreover, it is doubtful if in any other section of the Stock Exchange there are stocks with first class investment merits offering as satisfactory yields as home railway prior charges.

The market remains hopeful of an improvement in the dividend on L.N.E.R. second preference from 2⅜ per cent. to 2½ per cent., and that fractionally better payments may also be possible on Great Western ordinary and L.M.S.R. ordinary, which received 4 per cent. and 2 per cent. respectively for 1941. Assuming that these hopeful views were borne out, yields would be exceptionally attractive, and good improvement in prices would be justified, particularly as the disposition is to assume that no increases in dividends are likely unless there were good prospects of maintaining the better dividend totals in future. The relatively moderate yield of around 5¼ per cent. on London Transport "C" stock reflects talk of the possibility of a rather better dividend, and is also due to the scope for improvement in distributions which may exist in this case after the war, the chances being that in post-war transport reorganisation or schemes of this kind, no change in capital structure would be proposed in regard to London Transport.

Despite inactive markets, South American railway stocks fully maintained recent gains, particularly those of the Argentine companies; sentiment has continued to be assisted by recent announcements as to debenture interest payments. The further payment on Entre Rios 4 per cent. debentures came as a surprise. Moreover, there has once again been a revival of hopeful views that the Argentine railways may receive more equitable treatment in the matter of exchange.

Compared with a week ago Great Western ordinary stock has risen from 56¾ to 57⅝ at the time of writing; and L.M.S.R. ordinary from 26½ to 27⅜, while the 1923 preference was better at 62½; as was L.N.E.R. second preference at 31¼, compared with 30. Southern deferred rallied from 21⅞ to 22½, but at 74¼ the preferred has moved back slightly at the time of writing. Among gains in foreign rails, Argentine Gt. Western 5 per cent. debentures were higher at 56½, as were Leopoldina debentures at 50 and United of Havana debentures at 47½. Higher levels also ruled for various Indian railway securities.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open 1941–42	Week Ending	Traffic for Week: Total this year	Traffic for Week: Inc. or Dec. compared with 1941	No. of Weeks	Aggregate Traffics to date: Totals: This Year	Aggregate Traffics to date: Totals: Last Year	Aggregate Traffics to date: Increase or Decrease	Shares or Stock	Prices: Highest 1941	Prices: Lowest 1941	Prices: Dec. 11, 1942	Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	6.12.42	29,160	+ 9,610	49	1,057,230	958,620	+ 98,610	Ord. Stk.	10⅜	3 11/16	10¼	Nil
	Argentine North Eastern	753	5.12.42	12,024	+ 1,650	23	308,448	266,730	+ 41,718	,,	6½	⅛	6	Nil
	Bolivar	174	Nov., 1942	6,380	+ 1,690	48	53,519	43,194	+ 10,325	6 p.c. Deb.	5	5	18	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	8	2 13/16	20	Nil
	Buenos Ayres & Pacific	2,807	5.12.42	103,080	+ 20,280	23	2,018,700	1,787,700	+ 231,000	Ord. Stk.	7⅜	1½	6	Nil
	Buenos Ayres Great Southern	5,080	5.12.42	185,340	+ 19,560	23	3,215,760	2,995,020	+ 220,740	Ord. Stk.	10⅛	3⅛	11½	Nil
	Buenos Ayres Western	1,930	5.12.42	58,440	+ 7,140	23	1,183,020	1,145,580	+ 37,440	,,	9	2½	12⅛	Nil
	Central Argentine	3,700	5.12.42	147,705	+ 55,647	23	2,854,485	2,467,017	+ 387,468	,,	8½	2⅛	8½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	9⅛	⅛	3¼	Nil
	Cent. Uruguay of M. Video	972	5.12.42	26,463	+ 3,408	23	477,268	495,123	− 17,855	Ord. Stk.	9⅛	1	5¼	Nil
	Costa Rica	262	Oct., 1942	13,131	− 9,031	13	51,375	91,158	− 39,783	Stk.	15⅛	11½	14	Nil
	Dorada	70	Nov., 1942	16,530	+ 3,470	48	173,705	136,030	+ 37,675	I Mt. Db.	97	97	88½	6⅞
	Entre Rios	808	5.12.42	20,064	+ 6,942	23	423,432	387,066	+ 36,366	Ord. Stk.	4	1	7	Nil
	Great Western of Brazil	1,030	5.12.42	19,300	+ 3,300	49	566,200	493,900	+ 72,300	Ord. Sh.	11/-	1/-	28/9	Nil
	International of Cl. Amer.	794	Oct., 1942	$439,491	− $30,010	42	$5,072,794	$4,666,581	+ $406,213	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	⅜	6d.	2	Nil
	La Guaira & Caracas	22¾	Nov., 1942	8,885	+ 1,960	48	80,810	72,370	+ 8,440	5 p.c. Deb.	—	—	80	6¼
	Leopoldina	1,918	14.11.42	30,288	* 3,259	20	1,390,255	1,209,568	+ 180,687	Ord. Stk.	4	¼	5½	Nil
	Mexican	483	30.11.42	ps. 407,800	+ ps.24,300	22	ps. 6,261,900	ps. 6,554,800	− ps. 292,900	,,	⅜	¼	⅜	Nil
	Midland of Uruguay	319	Oct., 1942	13,987	− 470	19	49,979	54,791	− 4,812	—	—	—	—	—
	Nitrate	382	30.11.42	5,497	+ 1,390	48	177,555	132,903	+ 44,652	Ord. Sh.	66/-	1 1/16	72/6	3½
	Paraguay Central	274	27.11.42	$3,866,000	− $466,000	22	$80,654,000	$76,166,000	+ $4,488,000	Pr. Li. Stk.	43	29	51½	11⅛
	Peruvian Corporation	1,059	Nov., 1942	77,634	+ 14,137	19	414,622	355,843	+ 58,779	Pref.	6½	1 1/16	14¾	Nil
	Salvador	100	Sept., 1942	c 55,000	+ c 10,000	14	c 183,000	c 156,172	+ c 156,172	—	—	—	—	—
	San Paulo	153½	29.11.42	36,496	+ 934	49	1,768,590	1,752,441	+ 16,149	Ord. Stk.	52	24½	58	3½
	Taltal	160	Oct., 1942	3,180	− 2,420	17	19,840	21,990	− 2,150	Ord. Sh.	1	6/-	2	Nil
	United of Havana	1,346	5.12.42	50,816	+ 29,548	23	952,182	436,691	+ 515,491	Ord. Stk.	2½	⅛	8	Nil
	Uruguay Northern	73	Oct., 1942	1,425	− 38	19	4,730	5,392	− 662	—	—	—	—	—
Canada	Canadian Pacific	17,039	7.12.42	1,586,400	+ 53,800	49	47,554,600	40,981,000	+ 6,573,600	Ord. Stk.	13 3/16	7⅛	16	Nil
India†	Barsi Light	202	Oct., 1942	13,747	− 255	30	106,747	101,002	+ 5,745	—	—	—	—	—
	Bengal & North Western	2,090	Oct., 1942	184,425	− 78,594	4	184,425	263,019	− 78,594	Ord. Stk.	345	253	370½	5⅛
	Bengal-Nagpur	3,267	10.8.42	274,725	+ 10,341	19	3,712,696	3,407,058	+ 305,638	,,	101	95⅜	100	4
	Madras & Southern Mahratta	2,939	31.7.42	341,625	+ 133,549	18	2,714,959	2,473,086	+ 241,853	,,	105 7/16	101⅛	105½	7 7/16
	Rohilkund & Kumaon	571	Oct., 1942	60,375	+ 10,969	4	60,375	49,405	+ 10,969	,,	342	290	358½	4⅛
	South Indian	2,402	31.7.42	197,725	+ 31,400	18	2,246,577	1,759,595	+ 486,982	,,	100	87	102½	4 1/16
Various	Beira	204	Sept., 1942	80,067	—	52	905,759	—	—	—	—	—	—	—
	Egyptian Delta	607	20.10.42	13,364	+ 1,277	31	224,460	157,047	+ 67,413	Prf. Sh.	1⅛	29/-	3½	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	68	45	42	8 1/16
	Midland of W. Australia	277	Oct., 1942	35,093	+ 12,188	14	119,414	81,882	+ 37,532	Inc. Deb.	90¼	86½	92½	6
	Nigerian	1,900	29.7.42	51,026	+ 12,476	19	1,212,844	1,122,822	+ 90,022	—	—	—	—	—
	Rhodesia	2,442	Sept., 1942	520,353	—	52	5,892,152	—	—	—	—	—	—	—
	South Africa	13,291	3.10.42	789,943	— 57,895	29	20,933,481	20,072,873	+ 860,608	—	—	—	—	—
	Victoria	4,774	June, 1942	1,410,451	+ 945,742	—	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ⅛

† Receipts are calculated @ 1s. 6d. to the rupee

Argentine traffics are given in sterling calculated @ 6⅞ pesos to the £

§ ex dividend

Yield % (See Note)
Nil
Nil
Nil
Nil
Nil
Nil
Nil
Nil
Nil
Nil
Nil
6¾
Nil
Nil
—
Nil
6¼
Nil
Nil
—
3¼
11⅛
Nil
—
3¼
Nil
Nil
—
Nil
—
5⅛
4
7⅛
4½
4⅛
—
Nil
8⅛
6
—
—
—
—

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